Center for Biological Diversity, et. al.

v.

Doug Burgum, et. al.

Case No. 2:24-cv-05459-MWC-MAA

Exhibit 2

Sable Offshore
Corporation Lease Extension of
Santa Ynez Unit Environmental
Assessment

OCS EIS/EA
BOEM 2025-023

Sable Offshore Corporation Lease Extension of Santa Ynez Unit Environmental Assessment

(Platforms Heritage, Harmony, and Hondo)

BSEE

BUREAU OF OCEAN ENERGY MANAGEMENT · U.S. DEPARTMENT OF THE INTERIOR ·

Sable Offshore Corporation
Lease Extension of Santa Ynez Unit

Environmental Assessment

Agency Name and Region	Bureau of Ocean Energy Management, Pacific OCS Region
Document Type	Environmental Assessment
BOEM Publication Number	BOEM 2025-023
Activity Type	Lease Extension
Document Date	May, 2025
Location	Southern California Planning Area
Lessee/Operator/Applicant	ExxonMobil/Sable Offshore Corporation
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Abbreviations and Acronyms

Bbbl	billion barrels of oil
BOEM	Bureau of Ocean Energy Management
BSEE	Bureau of Safety and Environmental Enforcement
CARB	California Air Resources Board
CFR	Code of Federal Regulations
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
DPM	diesel particulate matter
DPS	distinct population segment
EA	environmental assessment
EFH	essential fish habitat
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ft	foot (feet)
ft^2	foot (feet) squared
GHG	greenhouse gas
HDVIP	Heavy Duty Vehicle Inspection Program
IHA	Incidental Harassment Authorization
JOFLO	Joint Oil Fisheries Liaison Office
kg	kilogram(s)
km	kilometer(s)
kn	knot(s)
L	liter(s)
lb(s)	pound(s)
m	meter(s)
m^2	meter(s) squared
mi	mile(s)
ml	milliliter(s)
MMPA	Marine Mammal Protection Act
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
MPA	marine protected area
$MTCO_2e/yr$	metric tons of carbon dioxide equivalent per year
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
nm	nautical mile(s)
NO_x	nitrogen oxide(s)
NPDES	National Pollutant Discharge Elimination System
O_3	ozone

OCS	Outer Continental Shelf
OSRO	on-site spill response organization
OSV	offshore support vessel
PFMC	Pacific Fishery Management Council
PM_{10}	coarse particulate matter
$PM_{2.5}$	fine particulate matter
POCSR	Pacific Outer Continental Shelf Region
PTO	Permit to Operate
ROG	reactive organic gases
SBC	Santa Barbara Channel
SBCAPCD	Santa Barbara County Air Pollution Control District
SCB	Southern California Bight
SCAQMD	South Coast Air Quality Management District
SCCAB	South Central Coast Air Basin
SO_x	Sulfur Oxides
SYU	Santa Ynez Unit
TAC	toxic air contaminant
TEU	twenty-foot equivalent unit
TSS	Traffic Separation Scheme
USCG	U.S. Coast Guard
VCAPCD	Ventura County Air Pollution Control District

1 Introduction

1.1 BACKGROUND

The Department of the Interior issued Outer Continental Shelf (OCS) Oil and Gas Leases located offshore California between 1968 and 1982 including Leases OCS-P 0180, 0181, 0182, 0183, 0187, 0188, 0189, 0190, 0191, 0192, 0193, 0194, 0195, 0326, 0329, and 0461. The Leases were placed in the Santa Ynez Unit (SYU) on November 12, 1970. The SYU began producing in 1982 and all 16 leases continued beyond their primary term based on production in paying quantities from existing infrastructure. The three platforms in the SYU are Platforms Hondo, Heritage, and Harmony, all of which are located on the OCS offshore of Santa Barbara County (SBC) in the Southern California Planning Area (Figure 1-1). Platform Hondo was installed first, in 1976, and became operational in 1981 and is the closest to shore at 5.5 miles. Platforms Harmony and Heritage were installed in 1989 and became operational in 1993. Sable Offshore Corporation (Sable) is the current operator and is responsible for platform operation and maintenance.[1]

The SYU platforms were shut-in in 2015 when oil production stopped after an onshore pipeline spill. The pipeline is comprised of two segments, Line 901 and Line 903. The ruptured segment, Line 901, carries heated crude westward from Gaviota to Las Flores Canyon, and at the time of the incident was owned by Plains All American Pipeline (PAAPL) and operated by its subsidiary, Plains Pipeline, LP. Regulatory oversight of Line 901 and 903 was carried out by the Pipeline and Hazardous Materials Safety Administration (PHMSA), as both lines are classified as an onshore interstate transport pipeline under 49 U.S.C. 60101(7). In May 2016, PHMSA released its Final Investigation Report[2] into the Plains Pipeline 901 incident, finding the cause of the spill was corrosion of the pipeline due to ineffective protection against corrosion. There is no indication that age of SYU infrastructure contributed to the 2015 oil spill or has contributed to recent oil spills in the region.

The Bureau of Safety and Environmental Enforcement (BSEE) requires continued monitoring and preventative maintenance of the three SYU facilities to preserve the integrity of the unit's platforms, pipelines, and related equipment. Monitoring and maintenance include equipment, structural, and pipeline inspections, repairs, and preservation of required safety and utility systems. Additionally, BSEE has conducted over 800 on-site inspections of all three SYU platforms and associated pipelines since the 2015 shut-in to ensure compliance with safety and operational regulations.

1.1.0 Lease Extensions

As a Federal regulatory agency tasked with oversight of energy development on the OCS, BSEE pursues a mission of promoting safety, protecting the environment, and conserving resources through regulatory

[1] On February 14, 2024, ExxonMobil completed the sale of the Santa Ynez Unit assets to Sable. BOEM approved the operator designation for Sable on May 23, 2024.

[2] www.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/PHMSA_Failure_Investigation_Report_Plains_Pipeline_LP_Line_901_Public.pdf

oversight and enforcement. This imperative promotes a balance between environmental stewardship and responsible development of energy resources on the OCS, while ensuring a fair return to the taxpayer from offshore royalties.

Title 30 of the Code of Federal Regulations (CFR) part 250 section 250.180(e) allows BSEE to approve the continuation of the lease terms, keeping the leases in effect or active, despite the lack of oil or gas production. This is referred to as a lease extension. BSEE may approve a lease extension request from OCS lessees due to unforeseen operational constraints that may be necessary to develop a lease, conserve natural resources, or protect life, property, or the marine, coastal, or human environment. A lessee may request "more than a year to resume operations on a lease continued beyond its primary term when operating conditions warrant. Lease extensions only extend the time available for an operator resume production on a lease; and operators may resume production at any time without additional approvals from BSEE. The request must be in writing and explain the operating conditions that warrant a longer period. In allowing additional time, the Regional Supervisor must determine that the longer period is in the National interest, and it conserves resources, prevents waste, or protects correlative rights." 30 CFR 250.180(e).

After the rupture of the onshore Plains All-American Pipeline (PAAPL) Line 901 on May 19, 2015, and the subsequent Corrective Action Order from PHMSA to remove the pipeline from service, ExxonMobil (Exxon), the operator at that time, idled production from the SYU facilities on June 16, 2015. Under then-existing regulations, Exxon had 180 days to conduct lease-holding operations on the SYU leases. Due to uncertainty about the duration of repair operations for the PAAPL Line 901, Exxon submitted a request to BSEE on November 19, 2015, in accordance with 30 CFR 250.180(e), requesting an additional 365-days to resume lease-holding operations, providing additional time for Exxon to reestablish an onshore transportation solution. To determine whether Exxon's 30 CFR 250.180(e) request was in the National interest, BSEE reviewed environmental, oil and gas conservation, and economic data relevant to the SYU. BSEE found that the continued oil and gas development from Platforms Hondo, Harmony, and Heritage would help meet both California and National energy needs with while considering impacts on the human, marine, and coastal environments upon eventual restart of the SYU facilities and PAAPL Line 901 and 903.

BSEE subsequently reviewed and approved additional 365-day lease extension requests for SYU annually from 2016-2022, using an existing categorical exclusion (CE) covering administrative actions for lease management, including lease extensions.[3] Approval of a lease extension request does not approve new activity on a lease; it offers the operator more time to conduct activities, subject to additional NEPA review, on their lease. On October 19, 2023, Exxon submitted another request for a lease extension.

[3] BSEE and BOEM consider actions on a lease extension request a permitting and regulatory function subject to a defined categorical exclusion (516 Department Manual 15.4 C(7) - *Approval of lease consolidation applications, lease assignments or transfers, operating rights, operating agreements, lease extensions, lease relinquishments, and bond terminations*).

In a letter from the Center for Biological Diversity (CBD), dated February 3, 2023, CBD asked BSEE to deny the lease extension request citing "numerous harms" to public health and the environment from the lease extension. CBD states that extending the lease to allow facilities that have been idle for 10 years to resume production activities will increase the risk of oil spills, increase emissions and contribute to climate harm, put endangered species at risk, and contribute to public health issues.

BSEE conducted a Categorical Exclusion Review (CER) of Exxon's October 2023 lease extension request to resume production. A categorical exclusion (CE) exists for BSEE's decision on the lease extension. CEs are appropriate for federal actions that do not normally have a significant effect on the human environment (42 USC 4336(e)(1)).[4]

However, the CBD letter alleged potential impacts associated with extending Exxon's lease thus creating controversy regarding the proposed action's environmental impacts and triggering an extraordinary circumstance (43 CFR 46.215(c)). Accordingly, this Environmental Assessment serves to provide a more in-depth analysis of the environmental impacts associated with the lease extension request.

[4]The lease extension at issue here is appropriate for a CE. However, BSEE is undertaking additional environmental review here.

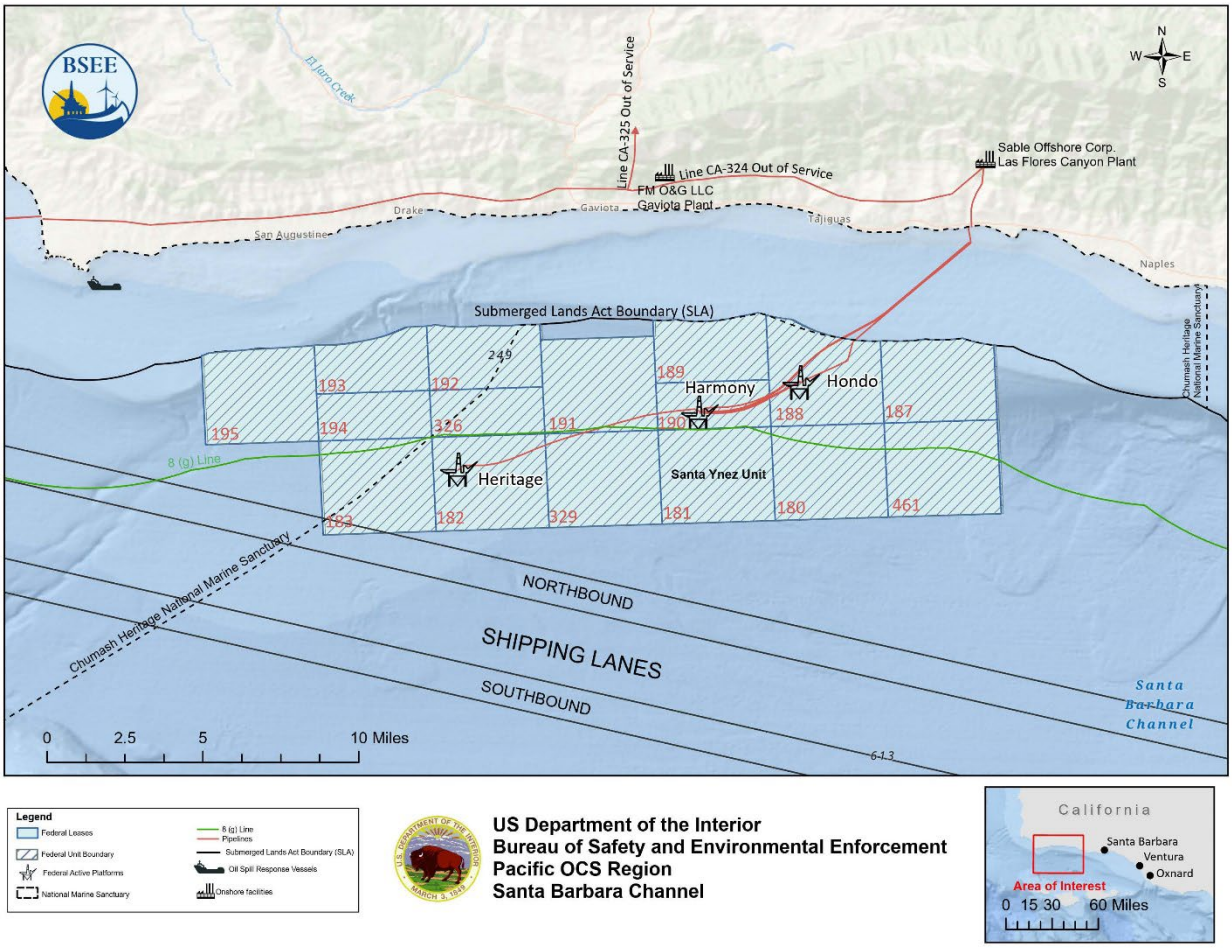

Figure 1-1 Regional Map including Platforms Hondo, Heritage, and Harmony.

1.1.1 Existing National Environmental Policy Act (NEPA) and other Environmental Analyses

Consistent with the Council on Environmental Quality's (CEQ) guidance, the Bureau of Ocean Management (BOEM) voluntarily considered the CEQ's rescinded regulations implementing the National Environmental Policy Act (NEPA), previously found at 40 CFR parts 1500–1508, as guidance to the extent appropriate and consistent with the requirements of NEPA and Executive Order 14154.

The impacts of activities associated with the development and production of the SYU platforms and pipelines are analyzed in detail in the 1984 Santa Ynez Unit/Las Flores Canyon Environmental Impact Statement (EIS)/Environmental Impact Report (EIR). Since then, a number of NEPA and other environmental analyses of the impacts to physical and biological resources from offshore oil and gas operations in the SYU and the Southern California Planning Area were completed providing updated information related to NEPA and the Endangered Species Act. These include:

- 2003 Offshore Power System Repair Project Santa Ynez Unit (SYU) Environmental Assessment (EA) and Finding of No Significant Impact (FONSI)
- 2008 Final ExxonMobil Power Cable CI Repair EA and FONSI
- 2009 Final ExxonMobil Power Cable CI Repair EA and FONSI
- 2011 Periodic Review of Worst-Case Discharge in support of the drilling of a new sidetrack infill well, SA-12ST1, from Platform Heritage
- 2013 Joint BOEM/California State Lands Commission (CSLC) Draft Carpinteria Offshore Redevelopment Project EIS/EIR
- 2014 Mitigated Negative Declaration ExxonMobil SYU Offshore Power System Reliability-B Phase 2 Project
- 2014 ExxonMobil revised Development and Production Plan for the SYU
- 2016 Use of Well Stimulation Treatments on the Pacific Outer Continental Shelf Pacific Outer Continental Shelf Region EA
- 2018 Programmatic EA Federally Regulated Offshore Oil and Gas Activities in the Southern California Planning Area
- 2020 Point Arguello Unit Well Conductors Removal EA
- 2021 Santa Ynez Unit (Platforms Heritage, Harmony, and Hondo) Impressed Current Cathodic Protection (IPCC) Anode Sled Project EA
- 2021 Final EA Santa Clara Unit (Platforms Grace and Gail) Conductor Removal Program
- 2023 Biological Assessment Endangered and Threatened Species Offshore Oil and Gas Development and Production Activities in the Southern California Planning Area
- 2024 Memorandum regarding SYU Pipeline Span Remediation Project
- 2025 SYU Development and Production Plan periodic review

1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

The Outer Continental Shelf Lands Act (OCSLA) as amended, and the Federal Oil and Gas Royalty Management Act (1982) directs the Secretary of the Department of the Interior, delegated to the BOEM and BSEE, to establish policies and procedures that expedite exploration and development of the OCS oil and gas production in a manner that protects and conserves the environment. Under OCSLA, BSEE and BOEM must administer offshore leases in a manner that balances the national interest in conserving natural resources (e.g., mineral resources), preventing waste, and protecting correlative rights (43 U.S.C.

1334(a)) with effective management of the marine, coastal, and human environments (43 U.S.C. 1332(4)). BSEE has the delegated authority to implement and enforce safety, environmental protection, and conservation of resources for offshore energy operations.

In executing its mission, BSEE permits offshore oil and gas operations, which includes reviewing requests for lease suspensions and extensions as outlined in 30 C.F.R §§ 250.160-180. BSEE may authorize lease suspensions and extensions at an operator's request to facilitate proper development of a lease (43 U.S.C. 1334(a)(1)(A). In making its decision, BSEE must consider the national interest, balancing the desirability of obtaining oil and gas resources with the effective management of the environment and well-being of affected citizens (43 U.S.C. 1345(c)).

On October 19, 2023, ExxonMobil, predecessor to current operator, Sable, submitted a lease extension request to BSEE to facilitate proper development of their SYU leases with the goal of resuming production on the Pacific OCS. BSEE must provide the regulatory review and decision on this lease extension request for ultimate resumption of production at SYU. The purpose of this action is to ensure BSEE implements the national policies of OCSLA requiring the safe, expeditious, and orderly development of the OCS with effective management of the marine, coastal, and human environment. BSEE's need for this action is to determine if additional time is appropriate for Sable to receive approval from State authorities to repair their onshore pipeline and resume the safe and environmentally sound restoration of production from the SYU. Allowing Sable to maintain its offshore leases and resume production supports the national interest in reducing dependence on foreign energy sources, conserving resources, preventing waste, and correlative rights. In addition, the collection of royalties, bonuses, and rents represent a revenue source for the federal government. BSEE must consider these benefits in the context of protecting the sensitive marine, coastal, and human resources of the OCS.

1.3 REASONABLY FORESEEABLE PROJECTS AND ACTIVITIES

This section describes the reasonably foreseeable projects and activities within the proposed action area that may occur in the same local area or timeframe as the proposed action. Two types of projects and activities are described: (1) approved and pending energy projects, and (2) other non-energy projects and activities that are occurring or may occur in the vicinity of the SYU and may interface with the same biological, economic, or cultural resources. All projects and activities described are located offshore Santa Barbara and Ventura Counties of California.

1.3.0 Offshore Energy Projects

Future oil and gas activities on existing Federal OCS leases are described below; this discussion is limited to activities occurring on existing platforms. Currently, no new offshore energy projects are reasonably foreseeable.

Federal Offshore Energy Projects

There are 23 oil and gas platforms located on the Federal OCS. Nineteen platforms (including the three SYU platforms) are located off the coasts of Santa Barbara and Ventura Counties. Activities that could

overlap with the Project Activities are limited to routine operations at adjacent facilities. Accidental oil spills from these platforms could also overlap with Project Activities. Routine operations of these platforms involve air emissions, discharges of permitted effluents, and transportation of personnel and supplies by crew and supply boats and helicopters. Transportation of personnel and supplies by crew and supply vessels would follow currently used routes between the ports and the platforms, and Project vessels would operate within the established vessel traffic lanes. Additional information about routine activities occurring in the SYU is provided in Section 2.

State Offshore Energy Projects

The Legacy wells re-abandonment project included the permanent re-abandonment of four leaking legacy oil wells located in the subtidal and intertidal zones offshore Summerland, Santa Barbara County. Legacy well abandonment of the Duquesne and Olson wells concluded in December 2021 and July 2021, respectively.[5] The re-abandonment of two Treadwell Pier oil wells in the intertidal zone of Summerland Beach was completed in February 2025.[6] The plugging and abandonment of all onshore and offshore wells at Rincon Island was completed in June 2021 (phase 1). The California Coastal Commission certified a final EIR to develop a decommissioning plan for the disposition of Rincon Island, the onshore facility, and the causeway (phase 2) in August 2024[7]. The permanent plugging and abandonment of Platform Holly's 30 oil and gas wells located offshore of the City of Goleta was completed in September 2024[8].

1.3.1 Offshore Protected Areas and Other Offshore Activities

National Marine Sanctuaries and National Parks

The Chumash Heritage National Marine Sanctuary (CHNMS) was designated in 2024; it is the sixth national marine sanctuary off the U.S. West Coast and encompasses 4,543 square miles of the Central California coast and waters. The southeastern border of the CHNMS includes segments of SYU pipelines and power cables in state waters. Channel Islands National Park and Channel Islands National Marine Sanctuary are collocated around the northern Channel Islands that create the southern border of the Santa Barbara Channel to the south of SYU. These areas provide for additional regulatory protections—for example, ships greater than 300 gross tons have restrictions—and additional permitting processes apply.

California Marine Protected Areas (MPAs)

The 1999 Marine Life Protection Act directed the State of California to design and manage a network of MPAs in order to protect marine life and habitats, marine ecosystems, and marine natural heritage, as well as improve recreational, educational, and study opportunities provided by marine ecosystems. MPAs include state marine reserves, state marine parks, and state marine conservation areas, which

[5] (https://slcprdwordpressstorage.blob.core.windows.net/wordpressdata/2021/12/SB44_2021.pdf).
[6] (https://content.govdelivery.com/accounts/CNRA/bulletins/3d70035)
[7] ttps://www.slc.ca.gov/oil-and-gas/rincon/
[8] (https://www.slc.ca.gov/oil-and-gas/southellwood/)

confer different levels of restrictions on recreational and commercial fishing in state waters out to 3 nm (California Department of Fish and Wildlife 2021).

Shipping Activity

The majority of the commercial vessels in the Santa Barbara Channel (SBC) use the vessel Traffic Separation Scheme (TSS), an internationally sanctioned set of traffic lanes established for marine safety providing predictability and safer navigation (United States Coast Guard (USCG) 2011). The north bound and south bound shipping lanes in the SBC are 1 nautical mile (nm; 1.8 km) wide, and each separation zone is 1 nm (1.8 km) wide (Figure 1-1). The estimated annual traffic through SBC TSS is 6,000 vessel movements. SBC is also extensively used by smaller commercial, fishing, and recreational vessels. Accidents and the subsequent spillage of fuel oil is a possibility for vessels transiting SBC, but no significant spillage has occurred since the TSS was established. Designated commercial shipping lanes exist within the San Pedro Bay for ships to enter and leave the Ports of Los Angeles Long Beach. Oil tankers, container ships, and other large commercial vessels use these shipping lanes when entering and leaving port.

The 2023 Pacific Coast Port Access Route Study (PAC-PARS; 2023[9]) resulted in recommended (voluntary) vessel transit corridors (in the case of PAC-PARS, a proposed fairway system) consistent with current vessel routes. The PAC-PARS Study included vessel traffic in waters of the Pacific Ocean from the baseline of Washington, Oregon, and California extending 200 nm (370 kilometers) off the West Coast. The final PAC-PARS coastal analysis (covering 2012, 2015, 2017–2021) found that vessel traffic in the study area increased over time (USCG 2023a). Based on these findings, an increase in vessel traffic over time is an existing baseline trend offshore California.

As noted above, the Designation of the CHNMS could divert some vessel traffic, such as tank vessels and cargo ships greater than 300 gross tons, farther offshore, due to renewed emphasis on the West Coast Offshore Vessel Traffic Risk Management Project recommendations (NOAA 2023a, 2023c; Pacific States/British Columbia and USCG Oil Spill Task Force 2002).

Commercial Fishing

The productive habitats within the SBC support important fishing grounds. Fishers ply these waters and land over 120 species for market using trawl, pot/trap, purse seine, gill net, long-line, hand rake, and hook-and-line gear. The region benefits from both high-volume (coastal pelagic fishes, market squid, and sea urchin) and high-priced (California spiny lobster, sablefish, and spot prawn) fisheries. Total landings from the SBC port complex consistently rank the highest in value within the State of California. During the year, many fishers vary their time spent among different fisheries depending on market demand, harvest regulations, weather conditions, and species abundance.

[9] U.S. Coast Guard. 2023. Pacific Coast Port Access Route Study. Docket #USCG-2021-0345. Jun 05. https://www.regulations.gov/document/USCG-2021-0345-0237. Accessed: January 29, 2024.

Point Source Discharges

The nearest point source discharge to the Project area is from the Oxnard wastewater treatment plant. The plant discharges 21 million gallons per day of wastewater at a secondary level of treatment (Steinberger and Schiff 2003).

Nonpoint Source Discharges

The nearest potential sources of nonpoint source pollution are the numerous small and intermittently flowing streams running out of the coastal range along the mainland side of the SBC. River runoff is difficult to quantify and is seasonally variable. Pollutants carried by a river runoff plume would be well diluted but perhaps still detectable by the time of arrival in the Project area.

2 Description of the Proposed Action and Alternatives

2.1 PROPOSED ACTION

The Proposed Action evaluated in this EA is for BSEE to review and either approve or deny a lease extension request for leases in the SYU. The SYU leases had been in a state of preservation due to a 2015 onshore pipeline rupture. Per 30 CFR 250.180(e), ExxonMobil, predecessor to current operator, Sable, requested an additional 365 days to resume operations on leases that have continued beyond their primary term.

2.2 ALTERNATIVE A LEASE EXTENSION APPROVED (PREFERRED ALTERNATIVE)

This Alternative assumes BSEE approves a lease extension request to permit additional time to fully return SYU to production. Alternative A considers the potential environmental impacts of near-term actions necessary to support a return to production, including use and maintenance of existing infrastructure, associated pipeline repair and span remediation efforts, completing regulatory inspections, and well maintenance activities. This alternative includes the reasonably foreseeable action of the three SYU platforms fully producing oil from existing wells but does not consider drilling new wells or the use of treatments to stimulate wells. Any such well stimulation treatments would be subject to additional NEPA review.

Impacts from Alternative A to the resources listed in Section 2.2.2 are described in the “Impacts” sections of each individual resource discussion in Section 3.

2.2.0 Project Activities

Under the Proposed Action, BSEE would continue to accept, review, and where appropriate authorize actions associated with continued maintenance of the SYU necessary to support a return to production.

Use of Existing Infrastructure

Platforms and pipelines that are in place and the onshore Las Flores Canyon processing facility. Detailed information on facilities, pipelines, and power cables are described in the original and revised Development and Production Plans submitted to BOEM and updated in the Annual Plan of Operations documents submitted to BSEE.

Pipeline Repair Including Span Remediation

Repair, replacement (aka, replacement installation), modification, or removal of offshore oil and gas pipelines may require approval by BSEE (30 CFR 250.1000). All planned pipelines in the Southern California Planning Area currently necessary for production have been installed. However, BSEE may

receive requests for repair of existing pipelines. Repair of existing pipelines can include concrete mattress installation.

A pipeline span remediation project was submitted by Sable to BSEE on November 19, 2024. BOEM completed their review on December 5, 2024. As submitted, the project occurs on pipeline segments located on Federal Lease OCS P00189 between Platform Harmony and Hondo and the 3-mile boundary with State waters. The project portion which extends into State waters is not discussed.

At the time of this review the entirety of oil and gas reserves for the oil fields within the SYU are classified by BOEM as PROE (Proved Developed Non-Producing) meaning there has been no production in the last 12 months. As per verbal communications with BSEE during November 2024, the span remediation project is one of several steps to bring the SYU back online and into production. Sable intended to initially resume production on Platform Harmony and is a factor in why the selected pipeline segments were proposed for span remediation.

On November 19, 2024, Sable submitted a proposal to BSEE to install supports around and under 3 pipeline segments in the SYU to remediate spans identified during a recent Remotely Operated Vehicle (ROV) survey. Sable identified 16 spans within waters ranging from 46’ to 75’ in length which require remediation. A pipeline span occurs when supporting seafloor sediments are transported away by water currents leaving a pipelines section unsupported. Remediation involves using a ROV to place sand/cement bags under and against both sides of the span at the seafloor to provide adequate support and maintain integrity of the pipelines by constructing support piers. The span remediation is a direct result of the requirement for the operator to perform pipeline inspections under the BSEE regulations. BSEE has no regulatory basis to "permit" Sable to conduct the remediation efforts and BSEE does not consider this activity to be a "pipeline repair." (30 CFR 250.1000 et seq.) The span remediation submittal to BSEE is essentially a courtesy notification. Because BSEE is not permitting or approving the activity, there is no Federal action requiring NEPA review. Nonetheless, this EA analyzes the potential environmental effects of pipeline span remediation efforts.

Regulatory and Structural Integrity Inspections

This section covers regulatory and structural inspections for the SYU facilities, which includes topside structural inspections, pipeline inspections, and oil spill preparedness verifications. These comprehensive inspections by BSEE inspectors address the potential risk associated with aging infrastructure. BSEE completed over 800 inspections since the 2015 SYU shut-in.

BSEE inspectors are on duty every day of the year to ensure compliance with BOEM and BSEE requirements. BSEE must ensure that offshore operators have oil spill response plans and that they are prepared and knowledgeable to implement these plans should an oil spill occur. BSEE periodically directs operators to deploy oil spill response equipment as listed in their response plans through unannounced exercises which BSEE has the regulatory authority to oversee. For any given exercise, equipment deployed may include oil spill boom, mechanical skimmers, response vessels, oil storage equipment, aircraft, and marker buoys. These equipment verification inspections and unannounced exercises ensures all offshore operators in the Pacific Outer Continental Shelf Region (POCSR) have the

requisite knowledge to immediately and effectively deploy onsite resources in the event of any accidental release from the platform.

Leak Detection Systems for Pipelines, Pipeline Inspections, and Structure Inspections. A pipeline leak detection system is required on all oil pipelines in the POCSR. BSEE's authority for this requirement is found in 30 CFR 250.1004(b)(5). The system consists of equipment at both the production end of the pipeline (the offshore platform) and at the onshore delivery point. The system uses instrumentation to compare the volume of material sent from the platform to the volume of material received onshore. If there is no difference in the two volumes, that indicates that there is no leak.

Leak detection systems play a crucial role in limiting the impacts should a leak occur. The system is required to include an alarm so that operators are immediately aware when there is a discrepancy between the input and output volumes. The system is also required to have adequate sensitivity to detect variations between the input and output volumes. In lieu of the foregoing system, BSEE can approve an alternate system capable of detecting leaks in the pipeline. Prior to a leak detection system's installation, a BSEE engineer reviews the system. The engineer is also notified at least 72 hours prior to the system's initial testing to allow BSEE the opportunity to witness the test.

Pipeline Internal Inspections. Pipeline permittees are required to perform third party verification internal inspections of pipelines every other year, within an interval not to exceed 13 months. Inspection plans must be submitted to BSEE for review a minimum of 30 days before the surveys are conducted. The survey results must be received by BSEE within 60 days after inspection completion. The internal surveys are performed to identify corrosion and/or damage using methods approved by BSEE. BSEE reviews the inspection results for indications of characteristic "red flags" that would initiate a repair or potentially shut in a pipeline, i.e., wall loss of 80% or greater (ASME B 31G); dents over 6% or a gouge, stress riser, or corrosion; or dents over 2% at girth or seam welds (ASME B 31.3 and 31.8). If a pipeline has a wall loss in the 70–79% range or a significant increase of wall loss from the prior internal inspection, BSEE will consider a verification inspection. If the operator fails to comply with pipeline permit conditions or if an inspection reveals any concerns about the pipeline's integrity that could affect safe and pollution-free transportation of fluids, the pipeline will be shut-in.

Pipeline External Inspections. Permittees of pipelines are required to have third parties perform external inspections in alternating years, within an interval not to exceed 13 months. Inspection plans must be submitted to BSEE for review a minimum of 30 days before the surveys are conducted. The survey results must be received by BSEE within 60 days after inspection completion. External inspections are to be conducted by a ROV with video and sonar, a high- or ultra-high resolution side scan sonar, or another method approved by BSEE. Inspection points include pipeline risers and riser clamps; any grout bags, spans, debris or other object which might constitute a pipeline safety concern or hazard to commercial fishermen or other users; identification of any weight or other coating damage; identification of third-party damage, such as anchor scars; observations of rectifiers and anodes; and visual inspection of the splash zone.

Structure Inspections. Title 30 CFR Part 250 Subpart I contains requirements for the maintenance, inspection, and assessment of platforms and related structures on the OCS. Lessees and operators must ensure the structural integrity of all platforms and related structures on the OCS for the safe conduct of drilling, workover, and production operations.

In-Service Inspection Plan. Lessees and operators must implement a comprehensive in-service inspection plan for all OCS platforms and structures. They must submit an inspection report to BSEE annually. The report must include:

(1) A list of fixed and floating platforms inspected in the preceding 12 months,
(2) The extent and area of inspection for both the above-water and underwater portions of the platform and the pertinent components of the mooring system for floating platforms,
(3) The type of inspection employed (e.g., visual, magnetic particle, ultrasonic testing),
(4) The overall structural condition of each platform, including a corrosion protection evaluation,
(5) A summary of the inspection results indicating what repairs, if any, were needed.

During platform visits, BSEE inspectors visually inspect platforms and the pipelines and conductors that descend from them for structural issues. BSEE inspectors also respond to accidents and other hazardous incidents that are reported by the lessee/operator.

Well Maintenance Activities

There are two general types of well maintenance activities: routine and workover. Routine servicing, typically performed while the well is still producing, involves tasks like inspecting, repairing, and maintaining the wellhead, installing or replacing equipment, and gathering data. Workovers, requiring the well to be shut in, involve more extensive repairs, such as replacing tubing, repairing corrosion, or addressing other issues that impact production.

For all well maintenance activities on the OCS, BSEE requires the operator to submit an Application for Permit Modification (APM) to request modification of an approved Application for Permit to Drill (APD) (30 CFR 250.460-465). Operators must provide a detailed statement of the proposed operations, as well as schematics, plat locations, and often, professional engineer certification. These APMs undergo technical and regulatory review to ensure the proposed modifications meet safety, operational, and environmental standards. BSEE will continue to review and approve APMs for wells that are included in the operators' approved DPPs.

Drilling new wells at SYU would require an APD, but this activity is not being considered by Sable in the foreseeable future.

Return to Production

A full return to production brings the SYU back online to production levels anticipated at or near levels prior to the 2015 shut-in. This means 97 wells in production with an estimated production of approximately 30,000 bbl of oil per day. All wells at SYU have been designated as no-flow and require support from artificial lift to produce oil. The remaining reserves available for production for the SYU total 0.190 Bbbl of oil (BOEM Field Reserve Estimate Summary 2015).

2.2.1 Oil Spills

Sable submitted an updated and revised Oil Spill Response Plan (OSRP) to BSEE in January of 2025 supporting a return to production. The OSRP covers all aspects of spill detection and response, including sections on spill detection; source identification and control; response planning; oil and debris removal and disposal procedures; wildlife cleaning and rehabilitation procedures; and Worst Case Discharge (WCD) scenarios.

Operation of the primary work vessels supporting the platform maintenance would involve the use of petroleum hydrocarbons, including small volumes of lubricating oils, hydraulic fluids, and waste oils. Spillage of these materials on any vessel could result in their release to the marine environment. The work vessels maintain an oil spill response plan and have spill containment and cleanup equipment on board in the event of local deck spills. If an oil spill were to occur from a vessel into the ocean, Sable would respond and assist the vessel in accordance with its agency-approved OSRP for POCSR Operations. Incident response procedures include mobilization of an Onsite Response Team at the platforms, and, if necessary, deployment of vessels from the on-site spill response organization (OSRO). Accidental spillage of lubricating oil, hydraulic fluids, and waste oil is expected to result in minimal localized impact to the marine environment due to typically small volumes of such spills, the onsite oil spill response capability, and other spill response resources in the immediate area.

Oil Spill Risk Assessment

For the purposes of this EA, BOEM does not consider oil spills to be a direct effect of the action, given they are neither authorized nor intended to occur. BOEM does, however, concur that certain smaller oil spills (50 bbl or less) could be an indirect effect of the action, given they are caused by the proposed action and are later in time, but still are reasonably certain to occur. This EA therefore provides scenario and other information related to smaller accidental oil spills in Appendix A.

In the case of low-probability catastrophic spills (high-volume, extended-duration oil spill regardless of cause), BOEM does not consider this category of spill to be a reasonably foreseeable effect of the action, since POCSR fields are mature and the majority of reservoirs have low to no pressure and require artificial lift to access the oil. All wells at SYU have been designated as no-flow and require support from electric submersible pumps to produce oil.

In normal, day-to-day platform operations, accidental discharges of hydrocarbons may occur. Such accidents are typically limited to discharges of quantities of less than one barrel (bbl) of crude oil. From 1963 to 2022, 1,451 oil spills were recorded. The total volume of oil spilled in the Pacific Region is dominated by the 1969 Santa Barbara Spill (80,900 bbl) which occurred soon after production began. During 1970–2022, there were 1,449 oil spills with an average volume of 1 bbl/spill and a total volume of 1,508 bbl, which represents less than 2% of the volume spilled in 1969.

The largest spill during 1970–2022 was the 588 bbl Beta Unit spill (“Huntington Beach” spill) in October 2021 from Amplify Energy Corporation’s San Pedro pipeline P00547 (Appendix, Table A-1). In a settlement agreement (Case No. 8:21-cv-01628-DOC-JDE, Document 476-4, U.S. District Court for the

Central District of California, 2022), the corporate defendants asserted that the spill was a result of severe damage to pipeline P00547 from two container ships that repeatedly dragged their anchors across it. Without accepting responsibility, the shipping companies agreed to contribute funds to the remediation process.

The next six largest spills were (in descending order of size; Appendix, Table A-1): 164 bbl in 1997 due to a pipeline break in the flange metal in State waters due to welding flaws; 150 bbl in 1996 due to equipment failure and error allowing emulsion to flow through flare boom; 101 bbl in 1990 from mineral oil mud released due to incorrectly positioned standpipe and closed valves; 50 bbl in 1994 due to process upset resulting in overflow of oil/water emulsion from tanks into disposal tube; and 50 bbl in 1991 after a pipeline riser ruptured when snagged by grappling hook used by workboat to retrieve a lost anchor. The source of oil spilled in 2012 (35.78 bbl; Appendix, Table A-1) was primarily from Platform Houchin caused by a burst plate (35 bbl, per USCG).

BSEE oil spill reporting requirements, along with development of more stringent regulations, implementation of rigorous inspection programs, imposition of civil and criminal penalties, and changes in equipment and procedures have all contributed to a safer work environment. BSEE has promulgated regulations that require offshore operators to develop safety and environmental management systems which are intended to foster a corporate culture of environmentally responsible and safe working conditions.

The current knowledge of the geology and understanding of reservoir characteristics in the Southern California Planning Area is well advanced. Drilling techniques and equipment have improved and drilling into these mature fields is generally considered to be low risk. The Southern California Planning Area has experienced significant changes in the status of the oil & gas (O&G) fields being developed and produced. Reservoir pressures have dropped to near zero in the majority of the fields now in production. In these cases, secondary[10] or tertiary[11] recovery methods are being used to force oil to the surface. The risk of a loss of well control (a blowout) resulting in a spill is exceedingly small under these conditions.

BOEM calculated oil spill rates for the Pacific Region using oil spill data (1963–2022) and cumulative production from the Pacific Region (Appendix, Table A-2). BOEM estimated the number of oil spills and the probability of one or more spills that could occur as a result of ongoing activities in the Southern California Planning Area in the "50 to 1,000 bbl" size range using Pacific Region oil spill rates. Oil spill occurrence is calculated as a function of the total amount of oil that could be economically produced in the Southern California Planning Area. The probability is based on the exposure to oil. There is 0.226 Bbbl of oil remaining that could be economically produced (exposed to a potential oil spill). BOEM estimates, in the "50 to 1,000 bbl" size range, there will be one spill with a 63% probability of occurrence (Appendix, Table A-2).

[10] Secondary refers to the reinjection of gas produced from the reservoir in order to push oil to the surface.
[11] Tertiary refers to the addition of chemicals designed to increase oil flow within a well.

For comparison, BOEM calculated oil spill probabilities using oil spill rates derived from all U.S. OCS operations (1996–2010) and the total amount of oil that could be economically produced in the Southern California Planning Area (Anderson et al. 2012). Using spill rates based on all U.S. OCS Operations (1996–2010), the probability of one or more spills occurring in the Pacific Region for the "50 to 1,000 bbl" size range is 95% (Appendix, Table A-2). The lower probability (63%) of spills in the "50 to 1,000 bbl" size range using POCSR oil spill data is reflective of the lower number of oil spills throughout POCSR production history. Using spill rates based on all U.S. OCS operations (1996–2010), the probability of one or more spills occurring in the greater than 1,000 bbl size range is 7% (Appendix, Table A-2). This is a conservative estimate based on overall U.S. OCS operations. For the greater than 1,000 bbl size range, BOEM did not calculate oil spill rates with only POCSR data due to the limited dataset (2 spills > 1,000 bbl occurred in 1969). A spill of this size would be an unlikely event in the POCSR because the majority of reservoirs have low to no pressure now due to the maturity of the oil fields.

Taking into account these factors, the overall risk of an oil spill occurring has declined over time in the Southern California Planning Area. Oil production has steadily declined over the decades, so there is now less oil to be produced and therefore less oil that could be accidentally spilled. However, other factors such as human error or equipment failure can play a role in risk of an oil spill and small spills (50 bbl or less) are possible for as long as oil is being produced.

Oil spill probability estimates are conservative given POCSR's:

- oil spill history,
- long established drilling program, including inspections and required maintenance,
- production from mature fields with low to no pressure,
- no floating drilling rigs,
- no new platforms being installed, and
- no oil transported via vessels.

Oil Spill Trajectory Analysis

Oil spill trajectory modeling was conducted to determine the movement and fate of spilled oil if a spill occurred in the Southern California Planning Area from existing offshore O&G operations. BOEM collaborated with the National Oceanic & Atmospheric Administration (NOAA) Office of Response & Restoration to create a Trajectory Analysis Planner (TAP) for the Southern California Planning Area. A regional TAP involves the development of a database created by analyzing statistics from a large number of simulated spill trajectories. These trajectories were run using the General NOAA Operational Modeling Environment (GNOME) with forcing from a high-resolution (1 km) Regional Ocean Modeling System (ROMS, Shchepetkin and McWilliams 2005) hindcast. This extensive model output allows modeling of realistic oil spill scenarios over a range of different regional oceanographic regimes (such as upwelling, relaxation, and eddy-driven flow). Modeled spills were started at the locations of the 23 Federal offshore O&G platforms in southern California and four pipeline locations, where oil is brought to shore, and represent the geographic range of the Southern California Planning Area.

Although the majority of wells on the SYU were designated as no-flow wells at the time of shut-in, thus the probability of a spill of the following magnitude remote, a maximum hypothetical spill of 1,000 bbl was simulated from each location using a spill rate of 200 bbl per day for 5 days. These numbers are conservative. It is highly unlikely that 200 bbl per day could spill from existing facilities over a 5-day period. Hypothetically spilling this large volume within the modeling environment allows analysts to better visualize where oil may travel if a spill were to occur. The visualizations of the modeled spills can be accessed online through the web-based TAP viewer (https://tap.orr.noaa.gov/#locations/south-california/impact_analysis).

Oil Spill Response

BSEE regulations at 30 CFR Part 254 require that each OCS facility have a comprehensive Oil Spill Response Plan (OSRP). These plans are not subject to Federal approval and thus not included as part of this EA (A*laska Wilderness League v. Jewell*, 788 F.3d 1212, 1224-25; 9th Cir. 2015). Response plans consist of an emergency response action plan and supporting information that includes an equipment inventory, contractual agreements with subcontractors and oil spill response cooperatives, worst-case discharge scenario, dispersant use plan, in-situ burning plan and details on training and drills. The Coast Guard is the lead response agency for oil spills in the coastal zone and coordinate the response using a Unified Command (UC), consisting of the affected state and the Responsible Party (i.e., the company responsible for spilling the oil) in implementing the Incident Command System (ICS) if an oil spill occurs. Oil spill drills, either agency-lead or self-lead by a company, also use the UC/ICS. California's Office of Spill Prevention and Response (OSPR) assumes the role of the State on-scene coordinator and plays a significant role in managing wildlife operations in the Southern California Planning Area as the State's Natural Resource Agency.

BSEE requires companies that operate in the OCS to have the means to respond to a worst-case discharge from their facilities. Companies meet this requirement by becoming members of Oil Spill Removal Organizations (OSRO).

The Marine Spill Response Corporation (MSRC) is the U.S. Coast Guard-classified OSRO based in Long Beach (www.msrc.org). MSRC is a nation-wide OSRO with multiple responder-class oil spill response vessels and oil spill response barges. They are also equipped to respond to an oil spill 24 hours a day.

MSRC is equipped and prepared to respond to oil spill threats to sensitive shoreline areas through the detailed and up-to-date information on sensitive areas and response strategies from the Los Angeles/Long Beach Area Contingency Plan (https://www.wildlife.ca.gov/OSPR/Preparedness/LA-LB-Spill-Contingency-Plan) and the California OSPR (https://www.wildlife.ca.gov/OSPR).

Fate and Effects of Oil

When an oil spill occurs, many factors determine whether that oil spill will cause significant, long lasting biological effects; comparatively little damage or no damage; or some intermediate degree of effect. Among these factors are the type, rate, and volume of oil spilled, geographic location, and the weather

and oceanographic and meteorological conditions at the time of the spill. These parameters determine the quantity of oil that is dispersed into the water column; the degree of weathering, evaporation, and dispersion of the oil before it contacts a shoreline; the actual amount, concentration, and composition of the oil at the time of shoreline or habitat contact; and a measure of the toxicity of the oil. Additionally, the level of oil spill preparedness, rapidity of response, and the cleanup methods used can also greatly influence the overall impact levels of an oil spill.

In the event of an accidental oil spill, a slick forms and part of the slick begins evaporating while the action of breaking waves forms oil droplets that are dispersed into the water column. Oil in the Southern California Planning Area ranges from very heavy (API 12) to very light (API 39). Light oil has a rapid evaporation rate and is soluble in water. Light crude oils can lose up to 75% of their initial volume within a few days of a spill (NRC 2003). In contrast, heavy oil (API < 22) has a negligible evaporation rate and solubility in water.

Depending on the weight of the oil spilled and the environmental conditions (i.e., sea state) at the time of a spill, six to 60% of oil during an oil spill would sink and be in the water column or on the seafloor in the vicinity of the spill. This is supported by a recent study of natural oil seeps at Coal Oil Point in the Santa Barbara Channel that range in depth from six to 67 meters offshore of Goleta, California (Leifer et al. 2006) and are assumed to release 100 bbl/day (Farwell et al. 2009). The distribution of heavy oil in a surface slick in the Santa Barbara Channel is primarily influenced by surface currents and falls out of the slick over a period of 0.4 to 5 days (Leifer et al. 2006).

A 1,000-bbl spill could oil several kilometers of coastline. The likely result would be patches of light to heavy tarring of the intertidal zone resulting in localized effects to contacted biological communities. The recovery time for these communities would depend on the environment. Within several months, natural processes will remove the oil from the rocks and beaches in these high energy rocky coasts, while low energy lagoons and soft-sediment embayments can retain stranded oil residue for several years.

Oil in the marine environment can, in sufficient concentrations, cause adverse impacts to fishes (NRC 1985). The effects can range from direct mortality to sublethal effects that inhibit growth, longevity, and reproduction. Benthic macrofaunal communities can be heavily affected, as well as intertidal communities that provide food and cover for fishes.

The Santa Barbara Channel contains some of the most active oil seeps in the world and may contribute 20,000 metric tons (173,200 bbl) of crude oil into the marine environment per year (Kvenolden and Cooper 2003; Henkel et al. 2014).

The field observations of oil spill effects on the marine environment are taken mostly from very large oil spills that have occurred throughout the world over the past three decades. This EA assumes the very unlikely scenario of one large spill of 1,000 bbl occurring as a result of the proposed action. In perspective, the *Exxon Valdez* spilled about 36,600 metric tons (~270,000 bbl) of crude oil into Prince William Sound in 1989, and the *Sea Empress* released 73,000 metric tons (~540,000 bbl) of crude oil off

southwest Wales in 1996. The *American Trader* spilled about 416,000 gallons (~10,000 bbl) of crude oil offshore Huntington Beach, California in 1990.

2.2.2 Environmental Resources Considered

Based on an examination of resources in the SYU and surrounding area and review of the Proposed Action, BOEM determined that the following environmental resources and human environment considerations could be potentially impacted by the Proposed Action (Table 2-1).

Table 2-11 Environmental resources potentially impacted by the proposed Project

Resource	Description of Potential Impact(s) from Proposed Activity
Air Quality	GHG, emissions from vessels and associated equipment
Benthic Resources	Habitat disturbance and resulting turbidity, accidental spills
Fishes and Essential Fish Habitat	Habitat changes, vessel traffic, noise, oil spills
Marine Mammals and Sea Turtles	Interactions with species due to marine vessel traffic, marine debris, oil spills, and noise
Marine and Coastal Birds	Light attraction and collisions for bird species, noise impacts, and oil spills.
Threatened and Endangered Species	Species are covered under the applicable resource category
Commercial Fishing	Space-use conflicts (including gear loss) from vessel traffic may interfere with fishing

Environmental Resources Considered but Not Included in the EA. The following resources were not included for analysis in this EA because BOEM determined that they are not in the Project area and/or would not be affected by the Project activities:

- **Intertidal, Wetland, and Shallow Subtidal Resources.** These resources would not be affected by the Proposed Action. Activities associated with the Proposed Action would occur approximately between 5-8 mi (8-13 km) offshore Santa Barbara County, in water depths between 842-1198 ft (256-365m) and would be outside of the scope of potential impacts.
- **Marine Protected Areas, Sanctuaries, and Preserves.** No SYU OCS infrastructure exists within the boundaries of any marine protected area. These resources would not be affected by the proposed Project. The Project would occur approximately between 5-8 mi (8-13 km) offshore Santa Barbara County, in water depths between 842-1198 ft (256-365m). Although the proposed activities are located near the Point Conception State Marine Reserve, Kashtayit State Marine Conservation Area, Naples State Marine Conservation Area, Channel Islands National Marine Sanctuary, Chumash National Marine Sanctuary, and the Point Conception Essential Fish Habitat Conservation Area, all project activities are expected to cause only minor seafloor sediment disturbances.
- **Cultural/Archaeological Resources.** Archaeological and cultural resources are protected by State of California and Federal laws and are known to be present in the SBC. The proposed action would occur from existing drilling platforms that were installed in 1976 (Platform Hondo)

and 1989 (Platforms Harmony and Heritage). Previous archaeological surveys in the Project area did not identify any potential archaeological or cultural resources near the proposed area (Dames and Moore, 1982; ExxonMobil, 2002 and 2008c). Only minor seafloor sediment disturbances are expected, and remotely operated vehicle (ROV) surveys will be conducted to ensure any area of proposed sea floor work is clear. The proposed action, therefore, has no potential to cause effects to historic properties as defined under Section 106 of the National Historic Preservation Act, and no further review under Section 106 is required.

- **Water Quality.** Water quality may be affected via discharge of vessel ballast, bilge, cooling water and sanitary wastes. These types of routine discharges are regulated by the U.S. Coast Guard (USCG) via the Federal Water Pollution Control Act. Increases in turbidity may occur from some activities associated with the Proposed Action, but would be temporary and short-term, and impacts on water quality would be limited and localized. The EPA, through the issuance of a National Pollutant Discharge Elimination System (NPDES) permit, regulates permitted discharges from the SYU facilities, namely sanitary and domestic wastes. It is not expected that the platform discharges will be detectable or exceed permitted allowances. All produced water will be injected, so there will be no produced water discharged into marine waters. . The Santa Barbara Channel contains some of the most active oil seeps in the world and may contribute 20,000 metric tons (173,200 bbl) of crude oil into the marine environment per year (Kvenolden and Cooper 2003; Henkel et al. 2014) and are assumed to release 100 bbl/day (Farwell et al. 2009). Smaller oil spills (50 bbl or less) could be an *indirect* effect of the proposed action and would be minimal compared to the oil output from the natural oil seeps in the Santa Barabara Channel (see Section 2.2.1).
- **Recreational Fishing.** Although some fishing activity occurs in the Project area, Project vessels are not expected to exclude recreational fishers from the area, so access would not be reduced.
- **Socio-economic Resources.**[12] Socioeconomic impacts were not analyzed for this Project because the SYU is an existing, developed field that has been in operation since the 1980's and no new impacts from the activities considered in this EA are anticipated.

2.2.3 Best Management Practices Included in the Analysis

Best Management Practices (BMPs) are recommended in this EA to protect the marine environment from harm to the maximum extent practicable during the proposed lease extension term. The Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE) concluded a consultation with National Marine Fisheries Services (NMFS) entitled "Endangered Species Act Section 7(a)(2) Biological and Conference Opinion: Development and Production of Oil and Gas

[12] Executive Order 14154, Unleashing American Energy (Jan. 20, 2025), and a Presidential Memorandum, Ending Illegal Discrimination and Restoring Merit-Based Opportunity (Jan. 21, 2025), require the Department to strictly adhere to the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 et seq. Further, such Order and Memorandum repeal Executive Orders 12898 (Feb. 11, 1994) and 14096 (Apr. 21, 2023). Because Executive Orders 12898 and 14096 have been repealed, complying with such Orders is a legal impossibility. BOEM verifies that it has complied with the requirements of NEPA, including the Department's regulations and procedures implementing NEPA at 43 C.F.R. Part 46 and Part 516 of the Departmental Manual, consistent with the President's January 2025 Order and Memorandum.

Reserves and Beginning Stages of Decommissioning within the Southern California Planning Area of the Pacific Outer Continental Shelf Region" on February 27, 2024 (Biological Opinion; NMFS consultation #: 2023-02183). BOEM subsequently directed all operators to acknowledge and incorporate terms and conditions arising from this consultation, which include new annual reporting requirements related to vessel use and in the unlikely event of a collision with marine wildlife.

Table 2-2 contains best practices long recognized in the POCSR that BOEM recommends BSEE consider in its decision on the lease extension request.

Table 2-2 Best Management Practices

Description of Potential Impact(s) from Proposed Activity	Relevant Impact-Producing Factor(s)	BMPs to Further Avoid or Minimize Impact(s) from the Proposed Project
General Compliance		• Within 30 days of issuance of BSEE's decision, Sable will submit to BSEE for approval an environmental compliance monitoring plan to monitor and track compliance with all best management practices incorporated into this Project. Sable's plan will specify submittal dates to report progress to BSEE in ensuring operations were conducted in accordance with the approved plan and supporting information, noting any deviations. • If Sable needs to make a change outside of the Project scope or if there is an emergency impact to biological resources, Sable must contact BSEE immediately.
Air Quality Impacts to onshore air quality	Air emissions	• Sable will adhere to the specific requirements in their Air Quality Permit. • Emissions are expected to be within allowable levels currently permitted under air permits issued to the three offshore platforms involved in the Project.
Benthic Resources	Turbidity Habitat Disturbance	• Sable will avoid anchoring vessels during Project activities. • Sable will keep a log for all materials lost overboard and report them to BSEE per regulations. • Temporary abandonment of failed components to minimize disturbances until final decommissioning activities for SYU occur. • ROVs provide required precision and visual confirmation to ensure that no sensitive habitat is disturbed.
Fishes and Essential Fish Habitats	Turbidity Electromagnetic Fields (EMF) Habitat Modification	• Sable will avoid anchoring vessels during Project activities. • Sable will keep a log for all materials lost overboard and report them to BSEE per regulations.
Marine Mammals and Sea Turtles	Vessel Strikes Vessel Traffic	• Sable use tools such as whalesafe.com (https://oceantoday.noaa.gov/help-whales/) or the Whale Alert app (https://www.whalealert.org/) or the Ocean Alert app to minimize potential vessel strike risks to marine mammals. • Sable will provide marine mammal, sea bird, and commercial fishing awareness training to all personnel participating in the Project. • All project-related vessels will comply with the Oil Service Vessel Traffic Corridors as shown on the appropriate NOAA charts. • Protected species observers and/or trained crew members will be required to be on watch to observe for marine mammals and sea turtles on vessels transiting to and from or in the action area to warn vessel

Description of Potential Impact(s) from Proposed Activity	Relevant Impact-Producing Factor(s)	BMPs to Further Avoid or Minimize Impact(s) from the Proposed Project
		operators of any marine mammals or sea turtles to minimize the risk of vessel strikes.
Marine and Coastal Birds	Artificial Lighting	• Lighting will be directed inboard and downward to reduce the potential for birds to be attracted to work areas. • All vessel cabin windows will be equipped with shades, blinds, or shields that block exiting light during night operations. • Project monitors will inspect lighted vessels and work areas on platforms for birds that may have been attracted to artificial lights twice per night during night operations and once again at dawn. • An Injured/Dead Bird Log will be maintained of all birds found with the status and health of birds on retrieval and release. A photo of each bird found, dead or alive, should be taken and cataloged. • If an injured bird is discovered, the bird will be transported on the next returning crew boat to an approved wildlife care facility.
Commercial Fishing	Vessel Traffic	• Sable will consult with JOFLO to minimize space-use conflicts associated with marine vessel traffic. • Notice to Mariners: Sable will file an advisory with the local USCG District Office, with a copy to the Long Beach Office of the State Lands Commission for publication in the Local Notice to Mariners at least 15 days prior to commencement of offshore activities and will place a similar notification in all Santa Barbara Channel ports that support commercial fishing vessels prior to the commencement of Project activities. • All project-related vessels will comply with the Oil Service Vessel Traffic Corridors as shown on the appropriate NOAA charts available from JOFLO.

2.3 ALTERNATIVE B: LEASE EXTENSION NOT APPROVED

Under this Alternative, the lease extension request would not be approved. As a result, Exxon may exercise its option to resume control over SYU from Sable in January 2026. Thereafter, Exxon may foreseeably commence temporary abandonment activities on SYU facilities in preparation for permanent decommissioning. This alternative would likely result in SYU returning to a state of preservation pending decommissioning, notwithstanding the temporary abandonment activities, until such time as a heavy lift vessel capable of working in the SYU water depths becomes available. This Alternative considers the potential environmental impacts of leaving existing infrastructure in-place and unmanned pending final decommissioning and removal. The *Programmatic Environmental Impact Statement for Oil and Gas Decommissioning Activities on the Pacific Outer Continental Shelf*, published in October 2023, discusses relevant decommissioning activities and alternatives and is incorporated by reference into this EA.

The Decommissioning PEIS considers the duration, magnitude, and geographic scope of impacts on each resource, the degree to which potential impacts are avoidable or may be mitigated, and the ability of

the affected resource to recover from an impact (population-level impacts rather than impacts on individuals). For additional detail, see PEIS sections 4.2.1; 4.2.4; 4.2.6 -9; 4.3.

Summary of Alternative B Impacts

Impacts on biological and physical resources listed in Section 2.2.2 from decommissioning are summarized here and will not be discussed in each individual resource section of this EA. Impacts to biological and physical resources listed in Section 2.2.2 are not anticipated to create long term or population level impacts on southern California benthic, fish, or marine mammal populations. The use of explosives to sever platforms could result in local, short-term impacts to marine mammals and fishes with swim bladders. Bottom disturbances from severance of platforms could also create temporary impacts on water quality and marine invertebrates/benthic habitat. The loss of jacket and pipeline-related benthic habitat could result in longer-term impacts to benthic and some fish species, as there would be no alternate habitats created to replace them.

2.4 ALTERNATIVE C: NO ACTION

The No Action alternative assumes no action is taken on the lease extension request and Sable continues maintenance and preservation activities on the offshore infrastructure necessary to support a return to production. This “no action” alternative is statutorily unfeasible. The Administrative Procedures Act (APA) requires that, “within a reasonable time, each agency shall proceed to conclude a matter presented to it.” (5 U.S.C. 555(b)). Although it is a statutory impossibility for BSEE to take "no action" on the lease extension request, this alternative provides a baseline by which to compare the potential effects of the action alternatives. Under this alternative, BSEE inspections and Sable maintenance activities would continue, as discussed in Section 1.1.

Summary of Alternative C Impacts

Impacts to the biological and physical resources listed in Section 2.2.2 are summarized here and will not be discussed in each individual resource section of this EA. Alternative C would not have impacts on the biological and physical resources listed in Section 2.2.2. Assuming no action is taken on the lease extension request, Sable would be allowed under the terms of its lease to continue maintenance activities including well workover operations necessary to support a return to production. The SYU facilities would continue to be maintained pursuant to existing preservation plans to ensure safety and environmental protection, including appropriate protection of biological and physical resources, including any listed or proposed endangered species and/or their habitat. The preservation plan ensures proper monitoring, inspection, and maintenance of offshore facilities, including all wells. Impacts to environmental resources would be similar to those analyzed under Alternative A, but likely to a lesser extent depending on if Sable maintains the SYU facilities in a state of preservation or returns to production.

3 Description of Affected Environment and Environmental Considerations

3.1 GREENHOUSE GAS LIFECYCLE EMISSIONS

The Bureau's analysis of Greenhouse Gas (GHG) life cycle emissions estimates the emissions resulting from the proposed action from bringing the Santa Ynez Unit (SYU) back online, as well as the processing, refining, distribution and consumption of oil and natural gas products derived from SYU's operations. The majority of the reasonably foreseeable emissions are the result of this final consumption stage.

3.1.0 Life Cycle Greenhouse Gas Emissions

Life cycle refers to emissions from all activities related to the exploration, development, production, and consumption of a resource. For hydrocarbon resources, the activities are often grouped into three stages: upstream, midstream, and downstream (Figure 3-1). Upstream activities include exploration, development, and production. Midstream activities are associated with refining, processing, storage, and distribution of fuels. Finally, downstream activities are associated with the consumption of those fuels.

Figure 3-1. Life Cycle Stages of Greenhouse Gas Emissions.

The activities associated with each stage result in GHG emissions, including carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). The analysis below quantifies projected GHG emissions that could occur from new leasing under the proposed action and the subsequent consumption of produced fuels.

3.1.1 Methodology

The Bureau's life cycle greenhouse gas analysis relies on three models to estimate results: Market Simulation Model (MarketSim) (Industrial Economics Inc. 2023a);[13] Offshore Environmental Cost

[13] Available online at https://www.boem.gov/oil-gas-energy/energy-economics/national-ocs-program.

Model (OECM) (Industrial Economics Inc. 2018; 2023b);[14] and Greenhouse Gas Life Cycle Emissions Model (GLEEM) (Wolvovsky 2024).[15] For a full description of these models, please refer to their documentation and associated reports.

MarketSim output is used as inputs to process OECM, and OECM is used to estimate the upstream emissions, while GLEEM is processed to estimate midstream and downstream emissions.

These models were developed for analysis at a national level, so there may be limitations on the scalability of the models to this regional and site-specific analysis. However, the models represent the best science and methodology available for estimating GHG emissions.

When estimating emissions, the models quantify the three main GHGs: CO_2, CH_4, and N_2O. To provide a single metric for understanding the emissions, the Bureau combines all three GHG emissions into CO_2 equivalent (CO_2e). This approach allows for a direct, aggregate comparison between emissions of pollutants with varying potential to trap heat and varying atmospheric lifespans, known as Global Warming Potential (GWP). For example, 1 metric ton of CH_4 has an impact similar to 25 metric tons of CO_2. This analysis uses 100--year GWP developed by the USEPA (USEPA 2025) (Table 3-1).

Table 3-1 Global Warming Potential (in metric tons)

Greenhouse Gas	CO_2	CH_4	N_2O
Global Warming Potential (CO_2e)	1	25	298

Source: USEPA (2025).

3.1.2 Life Cycle Greenhouse Gas Emission Estimates

Table 3-2 shows the upstream, midstream and downstream GHG emissions resulting from the SYU, based on expected production of 213,572,408 barrels of oil, and 439,045 thousand cubic feet of gas, over the estimated remaining years of the lease. The largest portion of the reasonably foreseeable emissions comes from the downstream, with the least emissions coming from the upstream. This is because SYU is an existing facility that is not expected to require substantial new infrastructure. To put these estimated emissions in perspective, the life cycle emissions (71,189 thousand metric tons) expected from the estimated remaining 27 years of SYU production are slightly less than the 75,221 thousand metric tons of CO_2e released in Utah in 2022 (USEPA 2025).

Table 3-2 Life Cycle GHG Emissions Santa Ynez Unit Operations (in thousands of metric tons)

	Upstream	Midstream	Downstream	Life Cycle
CO_2e	1,023	1,072	69,723	71,819

[14] Available online at https://www.boem.gov/oil-gas-energy/energy-economics/national-ocs-program.
[15] Available online at https://www.boem.gov/environment/greenhouse-gas-life-cycle-energy-emissions-model.

CO_2	695	831	69,471	70,997
CH_4	13	10	3	25
N_2O	*	*	*	1

Note: Values rounded to nearest 1,000 metric tons.
* Values less than 500 metric tons.

The new production from the SYU will displace fuels from other energy sources. MarketSim estimates that most of those fuels, 92.20%, will be replaced by other sources of oil or natural gas. The other 7.80% would displace low emitting energy sources including renewables and biofuels or would be the result of reduced energy demand. If SYU returns to production these changes in the energy market will result in a small increase in GHG emissions compared to the volume of GHG emissions if SYU does not return to production. Thus, the lifecycle emissions expected from SYU returning to production will be similar to the alternative where no production occurs, where SYU's foregone production is replaced by other sources.

While the Bureau has quantified the expected lifecycle GHG emissions in this assessment, the Bureau is not conducting a social cost of GHGs (SC-GHG) analysis. This action is not a rulemaking; rulemakings are the administrative actions for which the Interagency Working Group (IWG) originally developed the SC-GHG protocol. Second, Executive Order 14154 clarifies that the IWG has been disbanded and its guidance has been withdrawn. Further, NEPA does not require agencies to conduct a cost-benefit analysis. Including an SC-GHG analysis without a complete cost-benefit analysis, which would include the social benefits of the proposed action to society as a whole and other potential positive benefits, would be unbalanced, potentially inaccurate, and not useful to foster informed decision-making. Finally, purported estimates of SC-GHG would not measure the actual environmental impacts of the proposed action and may not accurately reflect the effects of GHG emissions. Estimates of SC-GHG attempt to identify economic damages associated with an increase in carbon dioxide emissions—typically expressed as a one metric ton increase in a single year—and typically includes, but is not limited to, potential changes in net agricultural productivity, human health, and property damages from increased flood risk over hundreds of years. The estimate is developed by aggregating results across models, over time, across regions and impact categories, and across multiple scenarios. The dollar cost figure arrived at based on consideration of SCC represents the value of damages avoided if, ultimately, there is no increase in carbon emissions. But SC-GHG estimates are often expressed in an extremely wide range of dollar figures, depending on the particular discount rates used for each estimate, and would provide little benefit in informing BSEE's decision. For these reasons, the Department of the Interior has also rescinded its memorandum of October 16, 2024, entitled, "Updated Estimates of the Social Cost of Greenhouse Gases," which had directed Interior bureaus to calculate SC-GHG using the methodology contained in the Environmental Protection Agency's Final Rule of March 8, 2024, 89 Fed. Reg. 16,820.

Given the above, the Bureau is not estimating SC-GHG for this because: (1) the Bureau is not engaged in a rulemaking for which the now-rescinded SC-GHG protocol was originally developed; (2) the IWG has been disbanded and all technical supporting documents and associated guidance have been

withdrawn; (3) NEPA does not require agencies to prepare SCC estimates or cost-benefit analyses; (4) costs attributed to GHGs are often so variable and uncertain that they are unhelpful for this analysis; and (5) the full social benefits of carbon-based energy production have not been monetized, and quantifying only the costs of GHG emissions, but not the benefits, would yield information that is both potentially inaccurate and not useful to the decisionmaker.

3.2 AIR QUALITY

3.2.0 Affected Environment

Sable's proposed Project would be conducted in the OCS offshore Santa Barbara County and Ventura County, both of which are within the South-Central Coast Air Basin (SCCAB). In Santa Barbara County, the wind is predominantly from the southeast and south-southeast. In Ventura County, the wind is predominantly from the west. In both counties, the predominant wind directions can result in pollutants generated offshore flowing towards populated land areas.

The climate, meteorology, and air quality trends of the Santa Barbara County and Ventura County areas have been described in detail in several planning and environmental documents and are best summarized in the Santa Barbara County Air Pollution Control District's (SBCAPCD) 2022 Ozone Plan (SBCAPCD 2022), the Final 2022 Ventura County Air Quality Management Plan (VCAPCD 2022), and the Environmental Setting of the Southern California OCS Planning Area (Argonne National Laboratory 2019), and are hereby incorporated by reference.

Criteria Pollutants

Section 328 of the 1990 Clean Air Act (CAA) Amendments, authorizes the U.S. Environmental Protection Agency (EPA) to regulate air pollution from OCS sources to ensure attainment and maintenance of Federal and state air quality standards. The National Ambient Air Quality Standards (NAAQS) establishes standards to identify pollutant levels that could result in harm to public health or the environment. This national standard applies to six common criteria pollutants: Ozone (O_3), Sulfur Dioxide (SO_2), Carbon Monoxide (CO), Nitrogen Dioxide (NO_2), Lead (Pb), Particulate Matter ($PM_{2.5}$ and PM_{10}). The presence of these pollutants identifies the overall quality of an area's ambient air. The CAA has two types of AQ standards: primary and secondary. Primary standards protect the public health which includes "sensitive" population groups such as the children, older populations, and those with asthma. Secondary standards protect the public welfare, including decreased visibility, damage to animals, crops, vegetation, and buildings.

Areas that meet or are cleaner than the NAAQS are classified as being in attainment. Areas that do not meet the NAAQS for one or more pollutant(s) are classified as nonattainment. Unclassifiable areas are treated as being in attainment. The entire OCS is unclassifiable and therefore treated as being in attainment. Maintenance areas are regions that were previously classified as nonattainment but have since demonstrated attainment of the NAAQS. The Federal attainment status of Santa Barbara County and Ventura County are found in 40 CFR § 81.305. Currently, Santa Barbara County is in attainment or

unclassifiable/attainment status for all NAAQS. Ventura County is in attainment for all NAAQS except for the Federal 8-hour ozone (O_3) standard (VCAPCD 2022).

On September 4, 1992, the EPA Administrator promulgated requirements (40 CFR Part 55) to establish air pollution control requirements for permitting, monitoring, fees, compliance, and enforcement for OCS sources subject to the CAA. EPA delegated authority to the SBCAPCD on November 8, 1993, to implement and enforce the requirements of 40 CFR Part 55. EPA delegated authority to the VCAPCD on January 27, 1994. The promulgated regulations at 40 CFR 55.14 require OCS sources to comply with applicable onshore air quality rules in the corresponding onshore area (COA) when an OCS source is located at or within 25 nm from the State Seaward Boundary (SSB).

SYU platforms Hondo, Harmony, and Heritage are grid-powered platforms located offshore Santa Barbara County and are currently permitted by SBCAPCD. Supply boats and combustion engines are the primary and secondary sources of criteria pollutants, while fugitive sources contribute mainly to the total reactive organic gases emissions (BOEM 2023). Most of the air pollution-emitting operations will take place in areas under SBCAPCD jurisdiction.

Greenhouse Gases

Due to the use of both stationary and mobile equipment that involve combustion processes, this Project could be a source of greenhouse gases (GHGs). GHGs are defined as any gas that absorbs infrared radiation in the atmosphere. The effects of GHGs are global, in contrast to the criteria pollutant impacts, which are localized to the county and multi-county levels. GHGs include water vapor, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). These GHGs lead to the trapping and buildup of heat in the atmosphere near the earth's surface, commonly known as the greenhouse effect. The primary source of GHGs in the U.S. is energy-use related activities, which include fuel combustion, as well as energy production, transmission, storage, and distribution. These energy-related activities generated 88% of the total U.S. emissions on a carbon-equivalent basis in 1990 and 90% in 2022. Fossil fuel combustion represents the vast majority of the energy-related GHG emissions, with CO_2 being the primary GHG (USEPA 2024).

Toxic Air Contaminants

Areas under the jurisdiction of SBCAPCD are subject to emissions of toxic air contaminants (TAC), primarily diesel particulate matter (DPM). DPM is a combustion contaminant and is emitted by equipment using diesel fuel, such as marine vessel propulsion engines and auxiliary engines. In 1998, the state's air regulatory oversight agency, the California Air Resources Board (CARB), identified DPM as a TAC. Currently, CARB programs control DPM emissions by various means, including, since 2007, the requirement for commercial harbor vessel operators to use California ultralow sulfur diesel with a sulfur content of 15 ppm or less, install non-resettable hour meters, and phase out Tier 1 engines. As a result of these regulatory requirements, DPM emissions have decreased by 62% and are expected to decline further as cleaner technologies emerge and additional emission control measures are implemented (BOEM 2023).

Another source of TACs is hydrocarbon spillage. Two types of spillage may occur: routine, accidental spills of lubricants, hydraulic fluids, and waste oils; and spills of diesel fuel from platform equipment or marine vessels. Hydrocarbon spills are addressed in the Oil Spills section (Section 2.2.1) of this document.

3.2.1 Impact Analysis

The potential impact producing factors for air quality will be emissions from currently permitted activities, including combustion engines, flaring operations, fugitive emissions, pigging (cleaning/testing) pipeline operations, tank and process operations, and chemical and solvent use. These sources produce air emissions of nitrogen oxides, carbon monoxide, sulfur oxides, particulate matter, reactive organic gases, and greenhouse gases. SBCAPCD issued Permits to Operate (PTOs) under 40 CFR Part 70 – State Operating Permit Programs - for Platform Hondo (#9100), Platform Harmony (#9101), and Platform Heritage (#9102) on September 4, 1994. In February 2023, the SBCAPCD conducted a comprehensive reevaluation and reissuance of these PTOs. In June 2024, the SBCAPCD approved transfer of owner/operator status from Exxon to Sable. This transfer action did not modify any original permit conditions nor authorize any changes (e.g., equipment updates, shifts in location, processes, and physical or operational modifications). These PTOs contain limits for allowable emissions associated with platform operations. Table 5.5, in each PTO, includes a list of permitted equipment and their allowable emissions (SBCAPCD 2023). Table 3-3 lists the annual permitted criteria pollutant emissions and GHGs in tons per year (tpy) associated with the proposed lease extension Project activities (**Table 3-3**).

Table 3-3 Total Permitted Facility Emissions (Annually)

CONTAMINANT	HARMONY EMISSIONS (tpy)	HERITAGE EMISSIONS (tpy)	HONDO EMISSIONS (tpy)
Oxides of Nitrogen (NO_x)	191.20	191.16	129.16
Reactive Organic Compounds (ROC)	58.54	60.40	70.11
Carbon Monoxide (CO)	116.40	116.38	75.91
Oxides of Sulfur (SO_x)	74.27	73.48	59.91
Particulate Matter (PM)	15.70	15.69	10.33
Particulate Matter ≤ 10 microns (PM10)	15.36	15.36	10.14
Greenhouse Gases (GHG)	33,818.99	33,815.49	17,734.80

Source: SBCAPCD 2023 (PTOs #9100, 9101, and 9102)

As required by the Permit Conditions of the OCS PTO, Sable must submit a *Boat Monitoring and Reporting Plan* to monitor and document platform-specific emissions from vessels utilized during this project. The PTOs also require each platform to provide offsets for operational net emission increases, excluding GHGs, as listed in Table 3-3, and for NO_x and ROC (ozone precursors) emissions from the SYU

Expansion projects as Entire Source Emissions (ESE) offsets (excluding platform Hondo). In 2016, District Rule 802, New Source Review (NSR), was updated to require that emissions offsets be based on the facility's potential to emit (PTE) rather than the expected emissions increases (SBCAPCD 2023). Due to this rule, the SYU triggers offset requirements for the contaminants listed in Table 3-3, excluding GHGs, in accordance with Rule 802.3. Permit conditions are thoroughly outlined in Section 9.0 of each 2023 PTO and cover administrative provisions, generic permit conditions, emissions standards, equipment specific requirements, and District only conditions, and are hereby incorporated by reference.

The projected emissions of NAAQS contaminants are short term, expected to disperse quickly over open waters, and are not anticipated to exceed any Federal air quality standards. Marine vessels would be expected to comply with all applicable rules and regulations regarding fuel sulfur content, speed, and exhaust controls. Due to the Project's permitted emissions limits and the fact that DPM emissions would mostly occur offshore, TAC emissions are not expected to be significant.

The GHG emission sources associated with the proposed Project activities are expected to be primarily internal combustion engines associated with ocean-going vessels and auxiliary equipment, and the predominant GHG emitted is expected to be CO_2. GHG emissions are calculated based on estimated fuel usage for those engines. Total annual permitted emissions of GHGs for the Project are 85,369.28 tpy (0.0774 million metric tons of carbon dioxide equivalent - $MMTCO_2e$). In 2022, emissions from GHG-emitting activities statewide were 371.1 $MMTCO_2e$, which is 53.9 $MMTCO_2e$ lower than 2018 levels and 59.9 $MMTCO_2e$ below the 2020 GHG limit of 431 $MMTCO_2e$ (CARB 2024).

This EA assumes Sable will adhere to the specific requirements in their Air Quality Permit.

3.2.2 Conclusion

Operations conducted onshore, on platforms, and at sea are expected to comply with all state, local, and Federal air quality rules and regulations. Emissions are expected to be within allowable levels currently permitted under air permits issued to the three offshore platforms involved in the Project.

3.3 BENTHIC RESOURCES

3.3.0 Affected Environment

The affected environment for benthic resources is the areas adjacent to each platform and associated pipelines. The sediments are regionally described as uniform silty sand or sandy silt with occasional rocky outcrops, which are generally in no-to-low disturbance conditions (Gillett et al. 2017; Thompson et al. 1993). For a detailed description of the Southern California OCS Planning Area, please see: www.boem.gov/Environmental-Setting-of-Southern-California/ (Section 8 Lower Trophic Resources and Habitats).

Three threatened or endangered invertebrate species could be impacted by this project and so are further considered. NMFS listed the white abalone (*Haliotis sorenseni*) as an endangered species on June 28, 2001 [66 FR 29054]. Due to poaching concerns, no critical habitat has been designated for this

species [66 FR 29048]. Historic overfishing and poaching, together with ongoing low population density, are considered responsible for white abalone decline and lack of recovery (Stierhoff et al. 2012). The most recent population estimate is 3,745 individuals (NMFS 2018). White abalone live on rocky substrates on offshore islands, submerged banks, and some locations along the mainland at depths up to 55 m (180 ft). During targeted surveys for the SYU, no white abalone were observed (Sanders 2012).

The black abalone (*H. cracherodii)* is a Federally endangered species [74 FR 1937] with designated critical habitat that includes several sections of coastline adjacent to the Southern California Planning Area [76 FR 2011]. When the species was listed on January 14, 2009, significant population declines were attributed to disease and commercial and recreational harvest.

The sunflower sea star (*Pycnopodia helianthoides*) was proposed to be listed as threatened under the ESA on April 11, 2023 (https://www.fisheries.noaa.gov/action/proposed-rule-list-sunflower-sea-star-threatened-under-endangered-species-act). The species is a large, fast moving, many-armed sea star, native to the eastern Pacific Ocean from Baja California, Mexico to the Aleutian Islands, Alaska; the species is most abundant offshore eastern Alaska and British Columbia. Between 2013 and 2017, sea star wasting syndrome (SSWS) killed an estimated 90% of the population (Lowry et al. 2022).

3.3.1 Impact Analysis

Benthic disturbance may result from pipeline repair and accidental spillage from routine operations. Pipeline repair, such as span remediation, includes using vessels and an ROV to place sand or concrete bags on the seafloor. These activities are anticipated to disturb the sediment where the concrete bags are placed, and may increase turbidity in the immediate area temporarily before returning to ambient conditions. This local turbidity typically lasts minutes and animal harm or death has not been recorded in the hours of existing video monitoring this action. ROVs provide required precision and visual confirmation to ensure that no sensitive habitat is disturbed.

For the purposes of this EA, BOEM does not consider oil spills to be a direct effect of the action, given they are neither authorized nor intended to occur. BOEM does, however, acknowledge that certain smaller oil spills (50 bbl or less) could be an indirect effect of the action, given they are caused by the proposed action and are later in time. This EA therefore provides scenarios and other information related to smaller accidental oil spills in Appendix A. In the unlikely event of spillage, it is anticipated to be small in volume and rapidly addressed according to Sable's OSRP.

The white abalone is an exclusively subtidal species and is not considered particularly vulnerable to oil spills; the most recent 5-year status review did not identify hydrocarbon contamination or spills as a threat (NMFS 2018). The effects of a small spill on black abalone would likely be undetectable as there are low densities onshore of the platform and oil would dissipate within hours or days based on normal tidal flushing and continuous oil deposition from natural sources that is common along the southern California coast (Lorenson et al. 2009).

Given the current absence of the sunflower sea star in the Southern California Planning Area and the isolated and small footprint of the project on the seabed, impacts to their population from ongoing

Project activities are not likely. According to the Channel Islands National Park Kelp Forest Monitoring Program, their densities were ≤ 1 individual per transect before disappearing from the Channel Islands National Park by 2014 (Sprague et al. 2022). The California Marine Life Protection Act monitoring dataset shows similarly low densities (Carr et al. 2022). This species prefers rocky substrate and seafloor operations will occur in soft sandy environments.

3.3.2 Conclusion

Impacts from the Proposed Action are expected to be temporary for pipeline repair and otherwise localized near the SYU Platforms and not impacting benthic resources.

3.4 FISHES AND ESSENTIAL FISH HABITAT

3.4.0 Affected Environment

Platforms Hondo, Harmony, and Heritage are located at depths of 842 ft (256 m), 1198 ft (365 m), and 1075 ft (328 m), respectively, in the Santa Barbara Channel, offshore of Goleta, Santa Barbara County, California. A series of pipelines and submarine power cables extend from the platforms into State waters and nearshore environment. The Santa Barbara Channel is a highly productive transition zone between the Oregonian and Californian (or San Diegan) biogeographic provinces for many marine species, including fishes (Burton 1998; Allen et al. 2006; Miller 2023), and is characterized by rich biodiversity. The larger ecosystem that encompasses the SYU area has been described in previous documents (Dailey et al. 1993; Argonne 2019), and these are incorporated by reference for this analysis.

The natural habitats potentially affected by the activities associated with lease extension are the water column and nearby soft sediments (e.g., sand and mud), which the Pacific Fishery Management Council (PFMC) classifies as essential fish habitat (EFH) for one or more federally managed fisheries (PFMC 2022; PFMC 2024a,b,c). Many of the fish species managed by the Pacific Fishery Management Council may be found within the SYU at some point during their life cycle, and EFH designated by each Fishery Management Plan is either present or nearby. The anthropogenic habitats (platform jacket, pipelines, submarine power cables, marine debris, and associated shell mound) associated with covered activities function similar to natural hard substrate and host substantial biomass and marine biodiversity within the SYU. Allen et al. (2006) describe fish communities associated with various habitats within California waters, including the Santa Barbara Channel. Past biological surveys associated with the Santa Ynez Unit demonstrate that rockfishes (*Sebastes* spp.) dominate the deeper waters and shell mound habitat is a favored substrate for many juvenile rockfishes (Love et al. 2003, 2010; Meyer-Gutbrod et al. 2019a,b; Meyer-Gutbrod et al. 2020). These citations are incorporated by reference for this analysis.

Of the marine fishes that may occur within the SYU, two are listed as endangered under the Endangered Species Act: the Southern California Distinct Population Segment [DPS] of west coast steelhead and tidewater goby. The Southern California DPS of west coast steelhead *(Oncorhynchus mykiss*) is comprised of the anadromous component of the native *O. mykiss* complex of populations inhabiting coastal streams from the Santa Maria River watershed (Santa Barbara County) south to the U.S. border with Mexico (Busby et al. 1996; NMFS 2012, 2023). Critical habitat for this steelhead DPS was initially

designated on September 2, 2005 (70 FR 52536), and includes many river reaches and estuarine areas accessible to listed steelhead in coastal river basins from the Santa Maria Basin to San Mateo Creek (Orange and San Diego Counties); it does not overlap with the SYU. Winter steelhead enter their home streams from November to April to spawn and juveniles migrate to sea usually in spring (Busby et al. 1996; NMFS 2012, 2023. Steelhead can migrate extensively at sea (Myers 2018).

The tidewater goby (*Eucyclogobius newberryi*) ranges from Del Norte County (near the Oregon border) south to Agua Hedionda Lagoon in northern San Diego County, and 44 units within this range were included in the final critical habitat designation (73 FR 5920). Primary tidewater goby habitat is found in small, shallow coastal lagoons that are separated from the ocean most of the year by beach barriers. These fish typically found in water less than 1 meter (3.3 feet) deep (FWS 2005). This includes shallow areas of bays and areas near stream mouths in uppermost brackish portions of larger bays. Tidewater gobies are absent from areas where the coastline is steep and streams do not form lagoons or estuaries. Although tidewater gobies can tolerate full seawater, they are most common in waters with salinities of less than 12 parts per thousand. Adults are benthic, and larvae are briefly pelagic (FWS 2005).

The following fish species are listed as either threatened or endangered under the ESA, but are unlikely to be found within the local area so are not further discussed: Chinook Salmon (*Oncorhynchus tshawytscha*, Sacramento River winter-run evolutionary significant unit [ESU], Upper Columbia River spring-run ESU, California coastal ESU, Central Valley spring-run EUS, Lower Columbia River ESU, Puget Sound ESU, Snake River fall-run ESU, Snake River spring/summer-run ESU, Upper Willamette River ESU), chum Salmon (*Oncorhynchus keta*, Columbia River ESU, Hood Canal summer-run ESU), Coho Salmon (*Oncorhynchus kisutch*, Central California Coast ESU, Lower Columbia River ESU, Oregon coast ESU, Southern Oregon & Northern California coasts ESU), steelhead (*Oncorhynchus mykiss*, California Central Valley DPS, Central California Coast DPS, Lower Columbia River DPS, Middle Columbia River DPS, Northern California DPS, Puget Sound DPS, Snake River DPS, South-Central California Coast DPS, Upper Columbia River DPS, Upper Willamette River DPS), eulachon (*Thaleichthys pacificus*, Southern DPS), green sturgeon (*Acipenser medirostris*, Southern DPS), Oceanic whitetip shark (*Carcharhinus longimanus*), scalloped hammerhead shark (*Sphyrna lewini*, Eastern Pacific DPS), and giant manta ray (*Mobula birostris*).

3.4.1 Impact Analysis

Pipeline span remediation activities associated with a lease extension may include a small amount of bottom disturbance and turbidity. Bottom disturbance is not likely to affect either local or regional fish populations and turbid conditions resulting from bottom disturbance will be short-lived, perhaps lasting only a few hours after activities have been completed. Existing marine infrastructure will continue to be used by marine fishes as habitat, elevating the local biomass and species diversity within the SYU (Love et al. 2003, 2010; Meyer-Gutbrod et al. 2019a,b; Meyer-Gutbrod et al. 2020). Accidently introduced marine debris may also function as habitat (e.g., Caselle et al. 2002) but may also entangle larger fishes. Local electromagnetic fields (EMF) will be altered by the cathodic protection systems used to prevent corrosion to marine infrastructure and by the energized submarine power cables used to provide electricity to the offshore platforms. Although there remains a number of research gaps, these altered

EMFs have not been observed to affect the distribution or movement patterns of marine animals, including salmonid fishes (Love et al. 2017; Klimley et al. 2017; Wyman et al. 2018, 2023; Williams et al. 2023). Other potential impact-producing factors, such as those that might originate from marine vessels (noise) or artificial light at night, may temporarily exceed baseline levels. All of these potential impact-producing factors are expected to be local, difficult to distinguish from background variability, and are not expected to detectably affect regional fish populations, including ESA-listed species, or habitats, including EFH.

Risks associated with invasive species introductions associated with covered activities are not regulated by either BSEE or BOEM. Discharges associated with covered activities (e.g., platform and vessel discharges) are regulated by EPA (NPDES permits for platforms) and USCG (for vessels) and are not regulated by either BSEE or BOEM.

Oil spill risk is described in Section 2.2.1. For the purposes of this EA, BOEM does not consider oil spills to be a direct effect of the action, given they are neither authorized nor intended to occur. BOEM does, however, concur that certain smaller oil spills (50 bbl or less) could be an indirect effect of the action, given they are caused by the proposed action and are later in time, but still are reasonably certain to occur. This EA therefore provides scenario and other information related to smaller accidental oil spills in Appendix A. Research shows that hydrocarbons and other constituents of petroleum spills can, in sufficient concentrations, cause adverse impacts to fish (GESAMP 1993; Grosell and Pasparakis 2021; NASEM 2022). The effects can range from mortality to sublethal effects that inhibit growth, longevity, and reproduction (Heintz et al. 2000; Bernanke and Köhler 2009; Schlenker et al., 2022). Benthic macrofaunal communities can be heavily impacted, as well as intertidal communities that provide food and cover for fishes. Although fish can accumulate hydrocarbons from contaminated food, there is no evidence of food web magnification in fish. Fish have the capability to metabolize hydrocarbons and can excrete both metabolites and parent hydrocarbons from the gills and the liver. Nevertheless, oil effects in fish can occur in many ways: histological damage, physiological and metabolic perturbations, and altered reproductive potential (Grosell and Pasparakis 2021; NASEM 2022). Many of these sublethal effects are symptomatic of stress and may be transient and only slightly debilitating. However, all repair or recovery requires energy, and this may ultimately lead to increased vulnerability to disease or to decreased growth and reproductive success.

The egg, early embryonic, and larval-to-juvenile stages of fish seem to be the most sensitive to oil. Damage may not be realized until the fish fails to hatch, dies upon hatching, or exhibits some abnormality as a larva, such as an inability to swim (Malins and Hodgins 1981; Grosell and Pasparakis 2021). There are several reasons for this vulnerability of early life stages. First, embryos and larvae lack the organs found in adults that can detoxify hydrocarbons. Second, most do not have sufficient mobility to avoid or escape spilled oil. Finally, the egg and larval stages of many species are concentrated at the surface of the water, where they are more likely to be exposed to the most toxic components of an oil slick.

3.4.2 Conclusion

The activities associated with lease extension are not appreciably different than what has been analyzed in previous documents associated with the development and production of the SYU (see Section 1.1.1), and environmental consequences of the Project are not considered to be detectable to regional fish populations, ESA-listed species, or habitats, including EFH.

This analysis considered other activities such as ongoing and proposed oil and gas projects in Federal and California State waters, marine shipping, point and non-point discharges, and commercial fishing activity nearby the SYU concerning bottom disturbance/turbidity, artificial habitat, marine debris, altered EMFs, oil spills, and other factors (noise and artificial light at night) and determined that the Project does not detectably increase the cumulative impacts to regional fish populations, ESA-listed species, or habitats, including EFH.

3.5 MARINE MAMMALS AND SEA TURTLES

3.5.0 Affected Environment

SYU facilities are located within Federal Outer Continental Shelf (OCS) waters and include Platforms Hondo, Heritage, and Harmony (Figure 1-1. Study area: Offshore Santa Barbara County, Santa Ynez Unit (Platforms Hondo, Heritage, and Harmony). The platforms are situated approximately 5-10 miles offshore Santa Barbara County, California and occur in water depths of 842 ft (257 m), 1198 ft (365 m) and 1075 ft (328 m), respectively.

There are a number of marine mammal species known to occur frequently in southern California waters surrounding the Project area, including baleen whale, toothed whale and dolphin species, seals and sea lions, and the southern sea otter. In addition, leatherback and loggerhead sea turtles are listed species that may also occur in the Project area. The species evaluated in this EA are included in Table 3-4. These species are those listed under ESA and/or MMPA and likely to occur in the Project area within the Southern California Planning Area.

Table 3-4 List of Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA) species expected to occur in the project area; for critical habitat status, N/A indicates not listed; for non-marine mammal species N/A means Not Applicable

Common Name	Scientific Name	Stock	Critical Habitat (CH)	ESA/MMPA Status	Citations for ESA listing
Blue whale	*Balaenoptera musculus*	Eastern North Pacific	N/A	Endangered/Depleted	*35 FR 18319; December 2, 1970*
Fin whale	*Balaenoptera physalus*	California, Oregon, and Washington	N/A	Endangered/Depleted	*35 FR 8491; June 2, 1970*

Humpback whale	*Megaptera novaeangliae*	California, Oregon, and Washington – Central American DPS)	86 FR 21082	Endangered/Depleted	*81 FR 62260; September 8, 2016*
Humpback whale	*Megaptera novaeangliae*	California, Oregon, and Washington – Mexico DPS	86 FR 21082	Threatened/Depleted	*81 FR 62260; September 8, 2016*
Sei whale	*Balaenoptera borealis*	Eastern North Pacific	N/A	Endangered/Depleted	*35 FR 12024; December 2, 1970*
Sperm whale	*Physeter macrocephalus*	California, Oregon, and Washington	N/A	Endangered/Depleted	*35 FR 18319; December 2, 1970*
Sperm whale	*Physeter macrocephalus*	Northern Gulf of Mexico	N/A	Endangered/Depleted	*35 FR 18319, December 2, 1970*
Guadalupe fur seal	*Arctocephalus townsendi*	Mexico to California	N/A	Threatened/Depleted	*50 FR 51252; December 16, 1985*
Leatherback sea turtle	*Dermochelys coriacea*	Throughout range	77 FR 4169	Endangered/N/A	*35 FR 8491 June 2, 1970*
Loggerhead sea turtle	*Caretta*	North Pacific DPS	N/A	Endangered/ N/A	*76 FR 58868 September 22, 2011*

3.5.1 Impact Analysis

Pipeline repair, such as span remediation, includes using an ROV to place sand or concrete bags on the seafloor. These activities may increase turbidity in the immediate area, but we anticipate that the increased turbidity is temporary, short term, localized, and will return to ambient conditions. Thus, we anticipate that impacts to marine mammals and sea turtles from turbidity (resulting from pipeline repair activities), if any, would be temporary and would not increase risk to marine mammals and sea turtles.

Oil Spills

For the purposes of this EA, BOEM does not consider oil spills to be a direct effect of the action, given they are neither authorized nor intended to occur. BOEM does, however, concur that certain smaller oil spills (50 bbl or less) could be an indirect effect of the action, given they are caused by the proposed action and are later in time, but still are reasonably certain to occur. This EA therefore provides scenario and other information related to smaller accidental oil spills in Appendix A. However, accidental spillage from vessel usage is highly unlikely and if it were to occur, it is anticipated to be small in volume, rapidly addressed, and any impacts (if any) would be minimized according to the OSRP. Thus, the proposed action would not increase risk to marine mammals or sea turtles with regards to potential oil spill risk.

Vessel Noise

General vessel noise is produced from vessel engines and dynamic positioning (DP) to keep the vessel stationary while equipment is deployed (if used in the proposed action). Recent analyses of the potential impacts to protected species exposed to noise generated during geotechnical survey activities using DP vessels determined that effects to protected species from exposure to this noise source are extremely unlikely to occur (NMFS 2021).

Vessel Strikes

Ruvelas (2020) provides a detailed summary of the interactions of protected species and vessels in Southern California waters. Species of highest concern for interactions with vessels in the California Bight are blue, humpback, and fin whales (Rockwood et al. 2017). Rockwood et al. (2017) also reported that collisions underestimate actual strikes because many go unseen. Moreover, while whales have some cues to avoid ships, this is true only at close range under certain oceanographic conditions and if the whales are not otherwise distracted by feeding, breeding, or other behaviors (Szesciorka et al. 2019). There have been no reports of vessel strikes associated with oil and gas development and production in the 30-year record (Ruvelas 2020). Although vessel strikes pose a risk for marine mammals and sea turtles, the proposed action does not add any vessel trips to the ongoing activities associated with oil and gas development. In addition, measures are in place for vessels associated with the ongoing oil and gas projects (NMFS, 2024; also see below for a list), which minimizes the risk of vessel strike in the action area. Thus, this proposed action does not add any additional risks to marine mammals and sea turtles for vessel interaction.

Best Management practices to minimize risk to Marine Mammals and Sea Turtles include all ongoing requirements listed in p. 141 – 142 of NMFS (2024) Endangered Species Act Section 7(a)(2) Biological and Conference Opinion “Development and Production of Oil and Gas Reserves and Beginning Stages of Decommissioning within the Southern California Planning Area of the Pacific Outer Continental Shelf Region”; NMFS Consultation Number: 2023-02183.

Risks to Marine Mammals and Sea Turtles can also be minimized by consistency with NMFS (2024) “Reasonable and Prudent Measures,” “Terms and Conditions,” and “Conservation Recommendations” (p. 181-183). For example, vessel operators reporting collisions with marine mammals and sea turtles and reporting to NMFS on oil and gas related vessel activity on an annual basis (p. 180). The SYU DPP was revised to include the Terms and Conditions, which requires operator compliance.

Critical Habitat

BOEM does not anticipate impacts to Critical Habitat for the leatherback sea turtle because it does not overlap with the action area. Critical Habitat for both DPSs of the Humpback whale does overlap with a portion of the action area. This Critical Habitat area serves as a feeding habitat (86 FR 21082), but Humpback whale prey (i.e., euphasiids and small pelagic fish) are not expected to be impacted by noise or vessel activity associated with this proposed action.

3.5.2 Conclusion

The activities considered in this analysis are either ongoing maintenance operations, (which include vessel traffic) or are temporary and local, (including pipeline span remediation) and are not anticipated to create new or additional impacts to marine mammals and sea turtles.

3.6 MARINE AND COASTAL BIRDS

3.6.0 Affected Environment

The marine and coastal bird population off southern California is both diverse and complex, being composed of as many as 195 species (Baird 1993). This community of birds has been described in detail in previous studies and environmental documents (e.g., Sowls et al. 1980; Briggs et al. 1981; 1987; Hunt et al. 1981; Carter et al. 1992; Baird 1993; Mason et al. 2007). Of the many different types of birds that occur in this area, two groups are generally the most sensitive to the potential impacts of projects on the OCS: marine birds (e.g., waterfowl, loons, grebes, shearwaters, storm-petrels, cormorants, gulls, terns and alcids) and shorebirds (e.g., plovers and sandpipers). While some of these species breed in the area, others may spend their non-breeding or "wintering" period there or may simply pass-through during migration.

Marine birds

Marine birds can be divided into four major groups based on habitat use, behavior, and/or phylogenetic relationships: nearshore, pelagic, breeding species, and non-breeding gulls and terns.

1. Nearshore species generally occupy relatively shallow waters close to shore. While in southern California, these species spend almost their entire time on the water surface. In the proposed project area, the most common nearshore species are Red-throated, Pacific, and Common Loons (*Gavia stellata*, *G. pacifica*, and *G. immer*); Western and Clark's Grebes (*Aechmophorus occidentalis* and *A. clarkii*); and Surf Scoters (*Melanitta perspicillata*). In southern California, nearshore species occur in highest numbers during the winter months; relatively few remain during the summer.
2. Pelagic species generally occupy deeper waters than nearshore species and may be found far from shore. These species spend much of their time on the water surface or diving for food. In the proposed project area, the most common offshore species are Sooty, Black-vented, and Pink-footed Shearwaters (*Puffinus griseus*, *P. opisthomelas*, and *P. creatopus*); Northern Fulmars (*Fulmarus glacialis*), Red and Red-necked Phalaropes (*Phalaropus fulicarius* and *P. lobatus*); Pomarine and Parasitic Jaegers (*Stercorarius pomarinus* and *S. parasiticus*); Common Murres (*Uria aalge*); and Rhinoceros Auklets (*Cerorhinca monocerata*). Although the period of highest density varies from species to species, with the exception of the Common Murre and Rhinoceros Auklet, most of the pelagic birds are nonbreeding visitors in southern California.
3. Breeding species in the vicinity of the proposed Project area nest mainly on the Channel Islands, although a few also nest on the mainland. The most common local breeding species are Leach's, Ashy, and Black Storm-Petrels (*Oceanodroma leucorhoa*, *O. homochroa*, and *O. melania*); Brown Pelicans (*Pelecanus occidentalis*); Brandt's, Pelagic, and Double-crested Cormorants (*Phalacrocorax penicillatus, P. pelagicus*, and *P. auritus*); Western Gulls (*Larus occidentalis*);

California Least Terns (*Sterna antillarum browni*); and several alcids, including Pigeon Guillemots (*Cepphus columba*), Cassin's Auklets (*Ptychoramphus aleuticus*), and Scripps's Murrelets (*Synthliboramphus scrippsi*). From 1989-1991, the total breeding marine bird population on the Channel Islands was estimated at over 100,000 birds (Carter et al. 1992). Location, numbers of nests and at-sea densities vary greatly from species to species.

4. Many gulls and terns (excluding the Western Gull and California Least Tern, which are local breeders), although an important component of southern California avifauna, do not readily fit into any of the above categories. Some are coastal in nature (e.g., Ring-billed gull, *Larus delawarensis*), while others remain far offshore (e.g., Arctic Tern, *Sterna paradisaea*). In the proposed project area, the most common non-breeding gulls and terns are California, Ring-billed, Heermann's, and Bonaparte's Gulls (*Larus californicus*, *L. delawarensis*, *L.heermanni*, and *L. Philadelphia*) and Forster's, Caspian, and Elegant terns (*Sterna forsteri*, *S. caspia*, and *S. elegans*).

Shorebirds

In addition to marine birds, there are a number of shorebirds that occupy coastal habitats in the vicinity of the proposed Project. More than 40 shorebird species have been recorded in southern California (Garrett and Dunn 1981; Lehman 2020); however, only about 24 species occur regularly in the area. Almost all locally occurring shorebirds migrate to southern California from northern breeding areas; very few shorebirds breed in this area. Although the majority of shorebirds occupy coastal wetlands, including estuaries, lagoons, and salt and freshwater marshes, they also utilize other coastal habitats, including sandy beaches, rocky shores, and open ocean. Common shorebird species in southern California and the proposed project area include Black-bellied Plovers (*Pluvialis squatarola*), Willets (*Tringa semipalmata*), Whimbrels (*Numenius phaeopus*), Marbled Godwits (*Limosa fedoa*), Black Turnstones (*Arenaria melanocephala*), Sanderlings (*Calidris alba*), Western and Least Sandpipers (*Calidris mauri* and *C. minutilla*), Dunlins (*Calidris alpina*), and Short-billed and Long-billed Dowitchers (*Limnodromus griseus* and *L. scolopaceus*). Locally breeding shorebirds are limited to Black Oystercatchers (*Haematopus bachmani*), Black-necked Stilts (*Himantopus mexicanus*), American Avocets (*Recurvirostra americana*), Killdeer (*Charadrius melodus*), and the federally threatened Western Snowy Plover (*Charadrius nivosus nivosus*), which nests and winters on sandy beaches in central and southern California. Because of their migratory nature and the fact that few species breed in southern California, shorebirds are most abundant in this area from fall through spring; comparatively few shorebirds remain in southern California during the summer months (McCrary and Pierson 2002).

Several bird species that have the potential to occur within the Project area have been afforded protected status by the state and/or federal governments due to declining populations and/or habitats. In addition, all native birds within the area are protected by the Migratory Bird Treaty Act of 1918 (MBTA), which is administered by the U.S. Fish and Wildlife Service (FWS). Special-status marine bird species found within the vicinity of the proposed activities are listed below in Table 3-5.

Table 3-5 Special-Status Marine and Coastal Birds Within or Near the Project Area

Common Name	Scientific Name	Federal Status	State Status
Brant	*Branta bernicla*	BMC	SSC
Light-footed Ridgway's Rail	*Rallus obsoletus levipes*	E	E, FP
Black Oystercatcher	*Haematopus bachmani*	BCC	
Western Snowy Plover	*Charadrius nivosus nivosus*	T, BCC, BMC	SSC
Marbled Godwit	*Limosa fedoa*	BCC	
Red Knot	*Calidris canutus*	BCC	
Short-billed Dowitcher	*Limnodromus griseus*	BCC	
Willet	*Tringa semipalmata*	BCC	
Marbled Murrelet	*Brachyramphus marmoratus*	T,BMC	E
Scripps's Murrelet	*Synthliboramphus scrippsi*	BCC, BMC	T
Guadalupe Murrelet	*Synthliboramphus hypoleucus*	BCC, BMC	T
Craveri's Murrelet	*Synthliboramphus craveri*	BCC	
Cassin's Auklet	*Ptychoramphus aleuticus*	BCC, BMC	SSC
Rhinoceros Auklet	*Cerorhinca monocerata*		WL
Tufted Puffin	*Fratercula cirrhata*	BCC	SSC
Heermann's Gull	*Larus heermanni*	BCC	
Western Gull	*Larus occidentalis*	BCC	
California Gull	*Larus californicus*	BCC	WL
California Least Tern	*Sternula antillarum browni*	E, BMC	E, FP
Elegant Tern	*Thalasseus elegans*	BCC	WL
Black Skimmer	*Rynchops niger*	BCC	SSC
Laysan Albatross	*Phoebastria immutabilis*	BCC	
Black-footed Albatross	*Phoebastria nigripes*	BCC, BMC	
Short-tailed Albatross	*Phoebastria albatrus*	E, BMC	SSC
Ashy Storm-Petrel	*Hydrobates homochroa*	BCC, BMC	SSC
Black Storm-Petrel	*Hydrobates melania*	BCC	SSC
Murphy's Petrel	*Pterodroma ultima*	BCC	
Hawaiian Petrel	*Pterodroma sandwichensis*	E, BMC	
Cook's Petrel	*Pterodroma cookii*	BCC	
Buller's Shearwater	*Ardenna bulleri*	BCC	
Pink-footed Shearwater	*Ardenna creatopus*	BCC, BMC	
Black-vented Shearwater	*Puffinus opisthomelas*	BCC, BMC	
Brandt's Cormorant	*Urile penicillatus*	BCC	
Double-crested Cormorant	*Phalacrocorax auritus*	BMC	WL
Brown Pelican	*Pelecanus occidentalis*	DE	DE

Status: *E – Endangered, T – Threatened*
DE – Delisted (formerly Endangered), C – Candidate
BCC – Bird of Conservation Concern, BMC – Bird of Management Concern,
SSC – Species of Special Concern, WL –Watch List, FP – Fully Protected

3.6.1 Impact Analysis

The proposed Project as described in Section 2.2 has the potential to impact coastal and marine birds. Several of these species are likely to occur in the vicinity of the Project area during the proposed project. The distribution and abundance of birds in the Project area would largely be affected by ocean temperatures, currents, prey distribution, and season. Impacts to birds with a strictly coastal distribution are not anticipated so those species are not discussed and analyzed, including the federally endangered Light-footed Ridgway's Rail and the federally threatened Western Snowy Plover.

Federal or state listed bird species have the potential to occur in the Project area. The California Least Tern is unlikely to occur in the vicinity of the Project area encompassing the area of platforms Hondo, Heritage, and Harmony. California Least Terns are summer residents that breed along the coast of southern and central California. The species is present in California from mid-April to mid-September and does nest on several beaches in northern Santa Barbara County. While studies conducted at some of the larger colonies in southern California show that at least 75 percent of all foraging activity during breeding occurs in the ocean (Atwood and Minsky 1983), approximately 90-95 percent of ocean feeding occurred within one mile of shore in water depths of 60 feet or less. California Least Terns were rarely seen foraging at distances between 1-2 miles from shore and were never encountered farther than two miles offshore (Atwood and Minsky 1983). However, there is evidence of some migration off California that occurs as far as 20 miles offshore or more based on observations off southern California (Pereksta, pers obs.). Further evidence offshore Mexico possibly corroborates these observations (Howell and Engel 1993; Ryan and Kluza 1999).

The Marbled Murrelet (*Brachyramphus marmoratus*) could be present in the Project vicinity. This bird breeds as far south as the Santa Cruz Mountains and is rare in southern California during the non-breeding season (mid-November to mid-April). However, Marbled Murrelets are generally found in nearshore waters within a few miles of shore, so it is unlikely to occur near the Project area, which is approximately 5-10 nautical miles off the coast. If they were within the Project area, they have the potential to be attracted by lighting during night operations.

The Short-tailed Albatross (*Phoebastria albatrus*) is not expected to occur in the vicinity of the Project site due to its rarity and the lack of records in the Project vicinity. Most individuals found off California in recent years have been during the fall and early winter with a few records in late winter and early spring (California Birds Record Committee 2007).

It is unlikely that Guadalupe Murrelets will occur in the vicinity of the Project site. The Guadalupe Murrelet is rare and geographically restricted, breeding only on Guadalupe and San Benito Islands off Baja California. Post-breeding dispersal north occurs in waters off southern California, but the species favors waters farther offshore on the shelf edge west and southwest of the northern Channel Islands between mid-July and early November (Lehman 2020). This species is rarely seen in inshore waters and there are no records for the Santa Barbara Channel in eBird (2025).

Scripps's Murrelets could occur within the vicinity of the Project site. During the breeding season, Scripps's Murrelets occur primarily from January to September, with a peak of abundance between late

February and July. Within the United States, this species breeds on San Miguel, Santa Cruz, Anacapa, Santa Barbara, and San Clemente Islands (IUCN 2018). During the breeding season, Scripps's Murrelets are generally concentrated in the Southern California Bight. Their distribution at sea during this time varies based on conditions in the marine environment. They disperse to forage in cool upwelling areas with the greatest densities occurring near Santa Barbara and Anacapa Islands and north of Point Conception along the coast. If any are in the Project area, they have the potential to be attracted by lighting during night operations.

A number of other special status marine bird species have the potential to occur in the Project area during Project activities. Several of these species occur year-round like the Cassin's Auklet, Heermann's Gull, Western Gull, California Gull, Brandt's Cormorant, Double-crested Cormorant, and Brown Pelican; although, they can be more common during some seasons than others. Species that could occur seasonally include the Rhinoceros Auklet, Elegant Tern, Ashy Storm-Petrel, Black Storm-Petrel, Pink-footed Shearwater, and Black-vented Shearwater.

Artificial lighting from project activities may affect marine birds. The holding or trapping effect of bright, artificial lighting can deplete the energy reserves of migrating birds, resulting in diminished survival and reproduction. For example, light entrapment may delay migrating birds from reaching breeding or foraging grounds or leave them too weak to forage or escape predation. Marine birds have been observed to continuously circle platforms until exhausted, whereupon they fall to the ocean or land on the platforms (Montevecchi 2006; Wolf 2007). Similarly, light entrapment may negatively affect breeding marine birds by increasing their time away from their nests, leaving the nests vulnerable to predation for longer periods of time, as well as causing parent chick separation of at-sea birds. In addition, time and energy spent circling lights may impede a bird's ability to successfully forage for enough food to feed their young.

Although lights associated with the offshore oil platforms off southern California do appear to attract marine birds, it is not known whether or to what extent such attraction disrupts migration or foraging behavior. Specifically, although the SYU Platforms have been operating for 30-40 years, there has been no indication that platform lighting has significantly affected any marine bird species. A BOEM study that assessed bird interactions with offshore petroleum production platforms in the San Pedro Basin, Santa Barbara Channel, and Santa Maria Basin found no incidence of light disorientation or light entrapment by nocturnally migrating birds during 524 hours of nighttime observations (Johnson et al. 2011).

Birds found within the vicinity of the proposed operations may be affected by lighting of the work area during nighttime operations. If lighting levels increase above the current baseline, they may attract bird species that are susceptible to artificial light attraction during night operations. In some cases, a bird may strike a work vessel or the platform leading to injury or death. Federally endangered or threatened birds are not expected to occur in the Project area and it is highly unlikely that any would be affected by the proposed activities. However, several special-status species, including the Ashy Storm-Petrel and the California threatened Scripps's Murrelet, and Guadalupe Murrelet may occur in the Project vicinity and could be attracted by vessel and platform lighting. Fledgling storm-petrels, shearwaters, and some alcids

are more attracted to artificial lights than are adults and are particularly vulnerable when they are dispersing away from their natal areas.

Vessels will be compliant with the USCG navigation light requirements.

Noise created from transiting vessels, helicopters, and other operation-related activities may exceed the threshold of potential effect for most birds, resulting in the potential for a flight response. Known data on sound-only flushes are available in Thiessen and Shaw (1957), Awbrey and Bowles (1990), Brown (1990), and Delaney et al. (1999).

Vessel and helicopter noise at a specific location is transitory; slowly increasing as a vessel approaches and decreasing as it passes. Because of the transitory nature of this noise and the mobility of marine birds it is unlikely that a marine bird would suffer an injury or death from vessel and helicopter noise. In addition, it is expected that the visual presence of the vessels and helicopters will elicit a response from birds in the area before noise does (USFWS 2006). Typical medium to large construction equipment (crane, large pumps, and generators) used throughout the offshore facilities would emit approximately 73 to 84-dB at 50 feet, which is near the 90-dB level that resource agencies consider potentially significant for many bird species.

Noise sources associated with the proposed activities may include equipment such as vessels, aircraft, winches, generators, cable engines, ROV equipment, jet pumps, and conductor installation equipment. Noise associated with construction activities on platforms are expected to be temporary and localized and are not expected to interfere with sensitive status bird species above the water surface. Noise resulting from operation of construction equipment below surface will result in an increase in underwater noise levels, but it is unknown whether these temporary increases will result in significant sound pressure levels.

The project area is not near any marine bird breeding colonies where nesting birds could suffer greater noise-related effects than those foraging or transiting through any project area near the platforms. Therefore, noise impacts to listed and other special status marine bird species are not expected to be significant.

Oil spills pose a significant threat to marine and shore birds. For the purposes of this EA, BOEM does not consider oil spills to be a direct effect of the action, given they are neither authorized nor intended to occur. BOEM does, however, concur that certain smaller oil spills (50 bbl or less) could be an indirect effect of the action, given they are caused by the proposed action and are later in time, but still are reasonably certain to occur. This EA therefore provides scenario and other information related to smaller accidental oil spills in Appendix A. The effects of oil on seabirds have been extensively reviewed (e.g., Bourne 1976; Fry 1987; Leighton 1995; Burger and Fry 1993). Because of the migratory nature of many bird species in the region, the significance of any impacts from a spill will depend on the habitats affected, the time of year, species present, and the numbers of birds in the area at the time of the spill.

The immediate danger of oil to most birds is to clog or mat the fine structure of the feathers that are responsible for maintaining water repellency and heat insulation. Oiled birds are subject to

hypothermia, loss of buoyancy, impaired ability to fly, and reduction in foraging ability. In addition to coating by oil, birds are also subject to chronic, long-term effects from oil that remains in the environment (Laffon et al. 2006; Alonso-Alvarez and Ferrer 2001). Small amounts of oil on a bird's plumage that were transferred to eggs during incubation have been shown to kill developing embryos (Albers 1978; Szaro et al. 1978). Birds can also accumulate oil in their diet and through preening. Holmes and Cronshaw (1977) and Brown (1982) have reviewed physiological stresses that can result from ingestion. An oil spill that affects important bird habitats (e.g., coastal marshes, intertidal foraging areas), even during periods of low use, may pose long-lasting problems. Birds have been observed to leave an area that has been affected by a spill (Hope et al. 1978; Chapman 1981; Albers, 1984). Albers (1984) suggests that such movements would cause severe impacts during the breeding season.

Any current spill risk is associated only with accidental spillage from vessels used for routine operations. However, accidental spillage from vessel usage is unlikely and if it were to occur, it is anticipated to be small in volume, rapidly addressed, and any impacts (if any) would be minimized according to the OSRP.

3.6.2 Conclusion

Artificial lighting associated with night operations could attract marine birds to the Project area, several of which have special-status designations. The State listed Scripps's Murrelet and Guadalupe Murrelet could occur in the vicinity of the proposed Project and, if present, could be attracted to the area at night by project-related lighting, but proposed lighting practices reduce the effects of artificial lighting on birds. In addition, if project activities occur after the fledging dispersal period of the marine bird species breeding on the Channel Islands, possible impacts from light attraction will be reduced even further. Noise associated with construction activities on platforms are expected to be temporary and localized and are not expected to interfere with sensitive status bird species above the water surface. The project area is not near any marine bird breeding colonies where nesting birds could suffer greater noise-related effects than those foraging or transiting through any project area near the platforms. The risk of oil spills is low and accidental spills from vessels are highly unlikely. This project will have no effects to federally listed species including the Short-tailed Albatross, California Least Tern, and Marbled Murrelet.

3.7 THREATENED AND ENDANGERED SPECIES

See Section 3.3 (Fishes and Essential Fish Habitat), Section 3.4 (Marine Mammals and Sea Turtles) and Section 3.5 (Marine and Coastal Birds) for information regarding threatened and endangered species potentially affected by the proposed Project.

3.8 COMMERCIAL FISHING

3.8.0 Affected Environment

Platforms Hondo, Heritage, and Harmony are located at depths of 842 ft (256 m), 1198 ft (365 m), and 1075 ft (328 m), respectively, in the Santa Barbara Channel, offshore of Goleta, Santa Barbara County, California. The home ports of most fishermen who use the fishing grounds near these platforms are likely Santa Barbara, Ventura, Oxnard, or Port Hueneme (Thomson 2015; Culver et al. 2007). In 2024,

these ports collectively landed a total of 81.5 million pounds of seafood, valued at approximately $65 million, accounting for 7% of total commercial fishing revenue for the U.S. West Coast (CDFW 2025; Pfeiffer et al. 2024).

Fisheries in the Santa Barbara Channel are diverse, comprising both high-volume, low-price and low-volume, high-price operations (Culver et al. 2007). Invertebrate species account for the majority of local landings, and fishing vessel targeting these species typically operate at depths less than 100 m (Culver et al. 2007; Maxwell et al. 2004; Neilson 2011; Kalvass and Hendrix 1997; Schroeter et al. 2001). The primary fisheries occurring within the affected environment include California market squid and coastal pelagic species purse-seine fishing; red sea urchin and sea cucumber diving; California spiny lobster and rock crab pot fishing; prawn trawling; and groundfish and halibut fixed gear and trawl fishing (CDFW 2025; Thomson 2015; California Sea Grant n.d.). Many of these fisheries are “day trip” fisheries, with vessels returning to port each day, fostering strong connections between fishermen and their communities.

Port Hueneme and Ventura receive the majority of market squid landings, while Santa Barbara receives the majority of lobster, crab, urchin, and sea cucumber landings (CDFW 2025; CDFW 2019; Culver et al. 2007; Thomson 2015). Peak activity for the spiny lobster and market squid fishery is October through March, while the red sea urchin and rock crab fisheries are year-round (Powell et al. 2024; California Sea Grant n.d.).

Limited fishing activities presently occur adjacent to the existing platform footprints. Additionally, fishing activities do not take place within known vessel traffic corridors established by the Joint Oil Fisheries Liaison Office (JOFLO).

3.8.1 Impact Analysis

Pipeline repair and span remediation efforts, such as installing supports or concrete mattresses, may impact commercial fishing activities in several ways: (1) increased vessel traffic during the nine days of work, (2) temporary preclusion from certain fishing grounds, and (3) potential for damaged and lost fishing gear — either from accidental drops during repair activities or from gear snagging on newly installed pipeline supports. Since very little fishing occurs near the platform footprints, maintenance activities on the platforms themselves are expected to have minimal impact; effects would likely be indirect and primarily stem from increased vessel traffic to and from the platforms. Increased space-use conflicts are expected to be minimal because Sable is actively consulting with JOFLO, which mediates conflicts between offshore operations and commercial fishing industry. JOFLO staff would ensure there is a clear understanding of approved vessel traffic corridors and techniques used to avoid fishing operations. Sable would file a timely advisory with the local U.S. Coast Guard District office, with a copy to the Long Beach Office of the State Lands Commission, for inclusion in the Local Notice to Mariners. A similar notification would be posted in all ports in the Santa Barbara Channel that support commercial fishing vessels prior to the commencement of the Proposed Action. The resulting preclusion footprint compared to the available fishing grounds in the region would be very small.

Damage to fishing gear from lost debris or newly installed pipeline support materials is expected to be minimal. Vessels using bottom-contact gear already tend to avoid the area due to the presence of existing infrastructure. As a result, the potential for gear conflicts is expected to be low. Sable would continue consulting with JOFLO to help minimize potential impacts. If JOFLO determines that conflicts with commercial fishing operations in the SYU area arise during the Proposed Action, Sable would make all reasonable efforts to resolve issues with affected fishermen, including modifying identified problem areas where practicable.

To the extent reasonable and feasible, Sable would recover any items lost overboard during pipeline repair activities that could pose a hazard to fishing operations. Logs would be maintained aboard the repair and support vessels to document the date, time, location, depth, and description of any items lost overboard. Vessel operators would minimize the potential for items to be lost by securing loose equipment where feasible and marking all deck items that could be lost with the vessel name.

3.8.2 Conclusion

Impacts from the Proposed Action are limited to a small fisheries preclusion area that are a short duration. Ongoing vessel transportation impacts will also be limited by requirements for reducing marine debris and seafloor hazards and communications with JOFLO to minimize any unforeseen conflicts that could arise during operations.

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Appendix A: Pacific Outer Continental Shelf Region Programmatic Oil Spill Risk Analysis

This appendix covers oil spill risk, fate of oil, trajectory analysis, and response.

A-1: Oil Spill Risk Assessment and Methods

In normal, day-to-day platform operations, accidental discharges of hydrocarbons may occur. Such accidents are typically limited to discharges of quantities of less than one barrel (bbl) of crude oil. From 1963 to 2022, 1,451 oil spills were recorded. The total volume of oil spilled in the Pacific Region is dominated by the 1969 Santa Barbara Spill (80,900 bbl) which occurred soon after production began. During 1970–2022, there were 1,449 oil spills with an average volume of 1 bbl/spill and a total volume of 1,508 bbl, which represents less than 2% of the volume spilled in 1969.

The largest spill during 1970–2022 was the 588 bbl Beta Unit spill ("Huntington Beach" spill) in October 2021 from Amplify Energy Corporation's San Pedro pipeline P00547 (Table A-1). In a settlement agreement (Case No. 8:21-cv-01628-DOC-JDE, Document 476-4, U.S. District Court for the Central

District of California, 2022), the corporate defendants asserted that the spill was a result of severe damage to pipeline P00547 from two container ships that repeatedly dragged their anchors across it. Without accepting responsibility, the shipping companies agreed to contribute funds to the remediation process.

The next six largest spills were (in descending order of size; Table A-1): 164 bbl in 1997 due to a pipeline break in the flange metal in State waters due to welding flaws; 150 bbl in 1996 due to equipment failure and error allowing emulsion to flow through flare boom; 101 bbl in 1990 from mineral oil mud released due to incorrectly positioned standpipe and closed valves; 50 bbl in 1994 due to process upset resulting in overflow of oil/water emulsion from tanks into disposal tube; and 50 bbl in 1991 after a pipeline riser ruptured when snagged by grappling hook used by workboat to retrieve a lost anchor. The source of oil spilled in 2012 (35.78 bbl; Table A-1) was primarily from Platform Houchin caused by a burst plate (35 bbl, per USCG).

The oil spill risk in the “50 to 1,000 bbl” range was calculated for the Pacific Region using historic oil spill data (1963–2022) and cumulative production from the Pacific Region. BOEM estimated the number of oil spills and the probability of one or more spills that could occur as a result of ongoing activities in the Southern California Planning Area in the “50 to 1,000 bbl” size range using Pacific Region oil spill rates (Table A-2). Oil spill rate is calculated as a function of the volume of oil handled or the amount of oil that could be exposed. Oil exposed is defined as the volume of oil produced or transported within a given area. Therefore, the total amount of oil that could be economically produced in the Southern California Planning Area was used as this exposure variable. In the “50 to 1,000 bbl” size range we estimate there will be 1 spill with a 63% probability of an oil spill occurring (Table A-2). The probability of an oil spill occurring decreases with the decreasing amount of oil left to be produced. Note that the 80,900 bbl 1969 spills were not included in this calculation, since they do not fall within the “50 to 1,000” bbl size range for spill probability calculations; a spill of this size is an extreme event and not reasonably foreseeable.

For comparison, we calculated oil spill probabilities using oil spill rates derived from all United States Outer Continental Shelf (US OCS) operations (1996–2010) and the total amount of oil that could be economically produced in the Southern California Planning Area (Anderson et. al. 2012). Using spill rates based on all US OCS Operations (1996–2010), the probability of one or more spills occurring in the Pacific Region for the “50 to 1,000 bbl” size range is 95%. The lower probability (63%) of spills in the “50 to 1,000 bbl” size range using POCSR oil spill data reflects the lower number of oil spills throughout POCSR production history.

The probability of one or more spills occurring in the greater than 1,000 bbl size range is 7% (Table A-2). This is a conservative estimate calculated using the same methodology as for the “50 to 1,000 bbl” range and based on all US OCS operations (1996–2010). For the greater than 1,000 bbl size range, we did not

calculate oil spill rates with only POCSR data due to the limited dataset (2 spills > 1,000 bbl occurred in 1969). A spill of this size would be an unlikely event in the POCSR.

Table A-1: Number and volume (in barrels, bbl) of crude, diesel, or other hydrocarbon spills recorded in the POCSR, 1963–2022, shown for three size categories of spills: 1) less than or equal to 1 bbl, 2) greater than 1 but less than 50 bbl, 3) greater than or equal to 50 bbl.

Year	# Spills ≤ 1 bbl	Vol. spills ≤ 1 bbl	# Spills 1–50 bbl	Vol. spills 1–50 bbl	# Spills ≥ 50 bbl	Vol. spills ≥ 50 bbl	Total # spills	Total volume	Cumulative vol. 1970–2022
1963	0	0.00	0	0.00	0	0.00	**0**	**0.00**	
1964	0	0.00	0	0.00	0	0.00	**0**	**0.00**	
1965	0	0.00	0	0.00	0	0.00	**0**	**0.00**	
1966	0	0.00	0	0.00	0	0.00	**0**	**0.00**	
1967	0	0.00	0	0.00	0	0.00	**0**	**0.00**	
1968	0	0.00	0	0.00	0	0.00	**0**	**0.00**	
1969	**0**	**0.00**	**0**	**0.00**	**2**	**80,900.00**	**2**	**80,900.00**	
1970	0	0.00	0	0.00	0	0.00	**0**	**0.00**	**0.00**
1971	0	0.00	0	0.00	0	0.00	**0**	**0.00**	**0.00**
1972	0	0.00	0	0.00	0	0.00	**0**	**0.00**	**0.00**
1973	0	0.00	0	0.00	0	0.00	**0**	**0.00**	**0.00**
1974	0	0.00	0	0.00	0	0.00	**0**	**0.00**	**0.00**
1975	1	0.10	0	0.00	0	0.00	**1**	**0.10**	**0.10**
1976	3	1.10	1	2.00	0	0.00	**4**	**3.10**	**3.20**
1977	11	2.20	1	4.00	0	0.00	**12**	**6.20**	**9.40**
1978	4	1.20	0	0.00	0	0.00	**4**	**1.20**	**10.60**
1979	5	1.70	1	2.00	0	0.00	**6**	**3.70**	**14.30**
1980	11	4.90	2	7.00	0	0.00	**13**	**11.90**	**26.20**
1981	21	6.00	10	75.00	0	0.00	**31**	**81.00**	**107.20**
1982	24	3.20	1	3.00	0	0.00	**25**	**6.20**	**113.40**
1983	56	7.70	3	6.00	0	0.00	**59**	**13.70**	**127.10**
1984	65	4.70	3	36.00	0	0.00	**68**	**40.70**	**167.80**
1985	55	9.30	3	9.00	0	0.00	**58**	**18.30**	**186.10**
1986	39	5.50	3	12.00	0	0.00	**42**	**17.50**	**203.60**
1987	67	7.50	2	11.00	0	0.00	**69**	**18.50**	**222.10**
1988	47	3.70	1	2.00	0	0.00	**48**	**5.70**	**227.80**
1989	69	4.10	3	8.33	0	0.00	**72**	**12.43**	**240.23**
1990	43	2.70	0	0.00	1	101.00	**44**	**103.70**	**343.93**
1991	51	2.80	1	13.00	1	50.00	**53**	**65.80**	**409.73**
1992	39	1.20	0	0.00	0	0.00	**39**	**1.20**	**410.93**
1993	32	0.76	0	0.00	0	0.00	**32**	**0.76**	**411.69**
1994	18	0.40	2	33.00	1	50.00	**21**	**83.40**	**495.09**
1995	25	0.90	1	1.43	0	0.00	**26**	**2.33**	**497.42**
1996	39	0.90	1	5.00	1	150.00	**41**	**155.90**	**653.32**
1997	20	1.50	0	0.00	1	164.00	**21**	**165.50**	**818.82**
1998	29	1.00	0	0.00	0	0.00	**29**	**1.00**	**819.82**
1999	26	1.35	1	10.00	0	0.00	**27**	**11.35**	**831.17**
2000	36	1.00	0	0.00	0	0.00	**36**	**1.00**	**832.17**
2001	48	1.70	0	0.00	0	0.00	**48**	**1.70**	**833.87**
2002	55	1.30	1	9.00	0	0.00	**56**	**10.30**	**844.17**
2003	56	1.37	0	0.00	0	0.00	**56**	**1.37**	**845.54**

Year	# Spills ≤ 1 bbl	Vol. spills ≤ 1 bbl	# Spills 1–50 bbl	Vol. spills 1–50 bbl	# Spills ≥ 50 bbl	Vol. spills ≥ 50 bbl	**Total # spills**	**Total volume**	**Cumulative vol. 1970–2022**
2004	36	1.00	0	0.00	0	0.00	**36**	**1.00**	**846.54**
2005	46	2.60	0	0.00	0	0.00	**46**	**2.60**	**849.14**
2006	46	1.99	0	0.00	0	0.00	**46**	**1.99**	**851.13**
2007	45	1.19	1	1.19	0	0.00	**46**	**2.38**	**853.51**
2008	45	1.20	1	27.00	0	0.00	**46**	**28.20**	**881.71**
2009	36	1.10	0	0.00	0	0.00	**36**	**1.10**	**882.81**
2010	33	0.63	0	0.00	0	0.00	**33**	**0.63**	**883.44**
2011	38	0.02	0	0.00	0	0.00	**38**	**0.02**	**883.46**
2012	30	0.08	1	35.70	0	0.00	**31**	**35.78**	**919.24**
2013	26	0.03	0	0.00	0	0.00	**26**	**0.03**	**919.27**
2014	10	0.48	0	0.00	0	0.00	**10**	**0.48**	**919.75**
2015	13	0.11	0	0.00	0	0.00	**13**	**0.11**	**919.86**
2016	0	0.00	0	0.00	0	0.00	**0**	**0.00**	**919.86**
2017	0	0.00	0	0.00	0	0.00	**0**	**0.00**	**919.86**
2018	0	0.00	0	0.00	0	0.00	**0**	**0.00**	**919.86**
2019	0	0.00	0	0.00	0	0.00	**0**	**0.00**	**919.86**
2020	0	0.00	0	0.00	0	0.00	**0**	**0.00**	**919.86**
2021	0	0.00	0	0.00	1	588.00	**1**	**588.00**	**1,507.86**
2022	0	0.00	0	0.00	0	0.00	**0**	**0.00**	**1,507.86**
Total	**1,399**	**92.00**	**44**	**313.00**	**8**	**82,003.00**	**1,451**	**82,408.00**	**1,507.86**

Oil spill probability estimates are conservative given POCSR's:

- oil spill history,
- long established drilling program,
- producing from mature fields with lower pressure,
- no floating drilling rigs,
- no new platforms being installed, and
- no oil is transported via vessels.

Table A-2: Estimated spill rate, mean number of oil spills, and spill occurrence probability in the POCSR for 1) 50-1,000 bbl: oil spills with volumes greater than 50 but less than 1,000 bbl, and 2) ≥ 1,000 bbl: oil spills equal to or greater than 1,000 bbl. Numbers are based on oil spill data from POCSR operations (1963–2022) or U.S. OCS Spill Data (1996–2010). Anticipated POCSR production is 0.226 Bbbl (billions of barrels). Spill rate based on methodology from Anderson et al. (2012).

Spill volume (bbl)	Dataset	Years	Structures	Spill rate	Estimated mean # spills	Probability ≥ 1 spill
50–1,000	POCSR	1963-2022	Platforms & Pipelines	4.38	1	63%
50–1,000	U.S. OCS	1996-2010	Platforms & Pipelines	12.88	3	95%
≥ 1,000	U.S. OCS	1996-2010	Platforms	0.25	0.06	3%

≥ 1,000	U.S. OCS	1996-2010	Pipelines	0.88	0.20	4%
≥ 1,000	US OCS	1996-2010	Total	1.13	0.25	7%

Formulae used in the Oil Spill Occurrence and Probability Calculations:

Spill rate λ = number of spills per Bbbl

Estimated Mean Number of Spills = spill rate λ x volume handled t (Bbbl) = λ t

Probability [n spills over future exposure t] = $[(\lambda t)^n e^{-\lambda t}] / n!$

Probability of Zero Spills = $[(\lambda t)^0 e^{-\lambda t}] / 0! = [1 \times e^{-\lambda t}] / 1 = e^{-\lambda t} = 1 / e^{\lambda t}$

Probability of One or More Spills = 1-Probability[zero spills] = $1 - 1 / e^{\lambda t}$

A-1.1 Oil Spill Assessment 1970s and 1980s

The 1975 Environmental Impact Statement (EIS) for Oil Development in the Santa Barbara Channel estimated 1 to 2 billion barrels (Bbbl) of oil would be produced (USGS 1975). To date the Southern California Planning area has produced 1.37 Bbbl of oil with a remaining production estimate of 0.2256 Bbbl. Therefore, the production estimates for the region are within what was estimated in the 1975 EIS. This section reviews, by geographic location, the oil spill assessments completed in the 1970s and 1980s environmental documents. This information is provided to support the discussion of the current status of the species, to provide background on previous determinations of effects to threatened and endangered species, to boost confidence in BOEM's current calculations, and to serve as a comparison with current estimates.

Santa Barbara Channel:

- USGS 1975 EIS: estimated a 70% chance that there would be at least one platform spill of 1,000 bbl, and if a large platform spill occurred, there was an 80% chance the spill would exceed 2,380 bbl (USGS 1975). (Platforms covered: Hogan, Houchin, Hillhouse, A, B, C, Henry, Grace, Habitat)
- 1980 Environmental Impact Report – Environmental Assessment (EIR-EA) for the Platform Gina and Gilda development: estimated that an average rate of operational platform spills is 1 spill per production platform per 10.6 years (Dames and Moore, 1980). Thus, it was estimated that Platform Gilda would have 1.9 spills over the 20-year production lifetime. (Platforms covered: Gina, Gilda)
- 1986 Platform Gail Environmental Assessment (EA): cumulative oil spill analysis estimated that during 32 years of production in the Southern California Planning Area there would be 14.5 spills ≥ 1,000 bbl and 6.6 spills ≥ 10,000 bbl (MMS 1986). (Platforms covered: Gail)
- 1984 Santa Ynez Unit Environmental Impact Report/ Environmental Impact Statement (EIR/EIS) examined spills ranging from 10 bbl to more than 500,000 bbl and

categorized a platform blowout as spilling between 1,000 and 500,000 bbl (SAI 1984). (Platforms covered: Hondo, Harmony, Heritage[16], and a fourth platform that was never installed)

- 1984 Point Arguello EIR/EIS estimated that a cumulative total of 144,000 bbl of oil would be expected to be spilled over a 30-year project lifetime (ADL 1984; Appendix H). (Platforms covered: Hildalgo, Harvest, Hermosa)
- Spills since 1969, ≥ 50 bbl:
    - Platform Habitat: 1990—100 bbl of drilling mud with mineral oil
    - Platform Gina: 1991—50 bbl of oil from a broken pipeline
    - Platform Hogan: 1994—50 bbl of oil
    - Platform Heritage: 1996—150 bbl of oil

San Pedro Bay:

- 1978 Beta Unit EIR-EA analyzed the following spills: 5000-bbl platform spill, 50-bbl pipeline spill, 50-bbl Long Beach Harbor spill, and a catastrophic 80,000-bbl platform spill (SLC, PLB, USGS 1978). (Platforms covered: Elly, Ellen, Eureka, Edith)
    - Beta Unit: 2021—588 bbl pipeline spill

Santa Maria Basin:

- 1985 Santa Maria Basin EIS/EIR analyzed oil spills ranging from 10 to 100,000 bbl (ADL 1985). (Platforms covered: Irene)
- Spills since 1969:
    - Platform Irene: 1997—164 bbl pipeline spill

A-1.2 Worst Case Discharge

Pacific OCS Region operators are required to submit oil spill response plans (OSRPs) which show the worst case volume of oil that could be spilled from three sources associated with offshore operations: vessels, tanks, and piping on board platforms, pipelines, and loss of well control events (Table A-3; 30 CFR Parts 254, 550). These plans are not authorized by BSEE and therefore not part of this consultation Alaska Wilderness League v. Jewell, 788 F.3d 1212, 1224-25; 9th Cir. 2015). The intent of this conservative requirement is to ensure that each operator has adequate spill response capabilities to respond to the largest conceivable oil spill from their facilities. If surface intervention is unsuccessful, an operator needs to mobilize a drilling rig to the Southern California Planning Area and drill a relief well. The largest worst case discharge volume is calculated as the release of stored oil on a platform, oil in the associated pipeline, plus the total flow released from a loss of well control up to the drilling of a relief well. The worst-case discharge volumes vary significantly across facilities. A continuous spill event (i.e.,

[16] A fourth platform was also covered by this document, but never installed. The platform has since been removed from the current Development and Production Plan for the Santa Ynez Unit.

from a loss of well control) is more difficult to quantify but unlikely to occur given the reservoir pressures in the POCSR (13 of the 23 platforms have no pressure; Table A-3).

Worst Case Discharge Scenario, Largest Volume in POCSR

Platform Heritage, Santa Ynez Unit, located approximately 8 miles offshore Gaviota, California, has the largest worst case discharge estimate for a loss of well control (blowout) with an estimated maximum daily flow rate of 33,986 bbl. It is estimated to take 17 days to stop the flow using surface capping equipment, for a total discharge volume of 577,762 bbl. If surface intervention is not achieved, the estimated maximum time it would take to mobilize a rig and drill a relief well would be 170 days, with a total discharge volume of 5,777,620 bbl. This would be a catastrophic event that is not reasonably certain to occur.

A-1.3 Summary of Oil Spill Risk Assessment

- This assessment assumed a maximum spill of 1,000 bbl at a rate of 200 bbl per day for 5 days.
- The probability of an oil spill occurring in the 50 to 1,000 bbl range is 63%.
- Projected oil production in the Southern California Planning Area is within what was analyzed in the environmental documents from the 1970s and 1980s.
- A large catastrophic event is not reasonably certain to occur.

Table A-3: Worst case discharges identified in Oil Spill Response Plans (OSRPs) in POCSR.

Facility	Pipeline (bbl)	Storage[1] (bbl)	Drilling (bbl/day)	Reference
Hogan	Pipeline to Shore = 41 (oil + water) Inter-Platform (Houchin) = 49	324	0	Pacific Operators Offshore OSRP 2012
Houchin	See Information for Hogan	324	0	Pacific Operators Offshore OSRP 2012
Elly	16" Pipeline Elly to Beta Pump Station = 3,111	8,925	0 (no drilling)	Beta Unit Complex OSRP 2012
Ellen	No Pipeline, transfers through Elly = 0	1840	45	Beta Unit Complex OSRP 2012
Eureka	Pipeline = 1,026	4,232	105	Beta Unit Complex OSRP 2012
Gail	Pipelines at Gail = 168	2,068	650	Santa Clara Unit OSRP 2012
Grace	Pipelines at Grace and Grace to Shore = 292	1,557	110	Santa Clara Unit OSRP 2012
Hermosa	Pipeline Hermosa to Shore = 2,502	3,760	0	Plains Exploration and Production Company OSRP 2012
Hildalgo	Pipeline Hildalgo to Hermosa = 489	2,478	0	Plains Exploration and Production Company OSRP 2012
Harvest	Pipeline Harvest to Hermosa = 221	3,820	0	Plains Exploration and Production Company OSRP 2012
Irene	Pipeline Irene to Shore = 1,124	1,064	750	Plains Exploration and Production Company OSRP 2012
Gilda	Pipeline Gilda to Shore = 1,994	857	200	DCOR OSRP 2012
Gina	Pipeline Gina to Shore = 546	223	0	DCOR OSRP 2012
"C"	Pipeline C to B = 11	306	2	DCOR OSRP 2012
"B"	Pipeline B to A = 92	646	0	DCOR OSRP 2012
"A"	Pipeline A to Shore = 3,685	589	0	DCOR OSRP 2012
Hillhouse	Pipeline Hillhouse to A = 57	1,534	0	DCOR OSRP 2012
Henry	Pipeline Henry to Hillhouse = 3	118	0	DCOR OSRP 2012
Edith	Pipeline Edith to Elly = 122	2,352	0	DCOR OSRP 2012
Habitat	No Pipeline, gas production	385	0	DCOR OSRP 2012

Facility	Pipeline (bbl)	Storage[1] (bbl)	Drilling (bbl/day)	Reference
Harmony	Pipeline Harmony to Shore = 6,210	2,607	< 2,000	ExxonMobil OSRP 2014
Heritage	Pipeline Heritage to Harmony = 731	2,684	33,986	ExxonMobil OSRP 2014
Hondo	Pipeline Hondo to Harmony = 560	3,811	< 2,000	ExxonMobil OSRP 2014

[1] Vessels, piping, tanks

A-2: Fate of Oil

In the event of an accidental oil spill, a slick forms and part of the slick begins evaporating while the action of breaking waves forms oil droplets that are dispersed into the water column. Oil in the Southern California Planning Area ranges from very heavy (API 12) to very light (API 39). Light oil has a rapid evaporation rate and is soluble in water. Light crude oils can lose up to 75% of their initial volume within a few days of a spill (NRC 2003). In contrast, heavy oil (API < 22) has a negligible evaporation rate and solubility in water.

Depending on the weight of the oil spilled and the environmental conditions (i.e., sea state) at the time of a spill, 6 to 60% of oil during an oil spill would sink and be in the water column or on the seafloor in the vicinity of the spill (ADL 1984). This is supported by a study of natural oil seeps at Coal Oil Point in the Santa Barbara Channel that range in depth from six to 67 meters offshore of Goleta, CA (Leifer et al. 2006) and are assumed to release 100 bbl/day (Farwell et al. 2009). The distribution of heavy oil in a surface slick in the Santa Barbara Channel is primarily influenced by surface currents and falls out of the slick over a period of 0.4 to 5 days (Leifer et al. 2006).

A-3: Oil Spill Response

BSEE regulations at 30 CFR Part 254 require that each OCS facility have a comprehensive Oil Spill Response Plan (OSRP). These plans are not subject to Federal approval and thus not included as part of this consultation (Alaska Wilderness League v. Jewell, 788 F.3d 1212, 1224-25; 9th Cir. 2015). Response plans consist of an emergency response action plan and supporting information that includes an equipment inventory, contractual agreements with subcontractors and oil spill response cooperatives, worst-case discharge scenario, dispersant use plan, in-situ burning plan and details on training and drills. The Coast Guard is the lead response agency for oil spills in the coastal zone and coordinate the response using a Unified Command (UC), consisting of the affected state and the Responsible Party (i.e., the company responsible for spilling the oil) in implementing the Incident Command System (ICS) if an oil spill occurs. Oil spill drills, either agency-lead or self-lead by a company, also use the UC/ICS. California's Office of Spill Prevention and Response (OSPR) assumes the role of the State on-scene coordinator and plays a significant role in managing wildlife operations in the Southern California Planning Area as the state's Natural Resource Agency.

BSEE requires companies that operate in the OCS to have the means to respond to a worst-case discharge from their facilities. Companies meet this requirement by becoming members of Oil Spill Removal Organizations (OSRO).

The Marine Spill Response Corporation (MSRC) is the U.S. Coast Guard-classified OSRO based in Long Beach (www.msrc.org). MSRC is a nation-wide OSRO with multiple responder-class oil spill response vessels and oil spill response barges. They are also equipped to respond to an oil spill 24 hours a day.

MSRC is equipped and prepared to respond to oil spill threats to sensitive shoreline areas through the detailed and up-to-date information on sensitive areas and response strategies from the Los Angeles/Long Beach Area Contingency Plan (https://www.wildlife.ca.gov/OSPR/Preparedness/LA-LB-Spill-Contingency-Plan) and the California OSPR (https://www.wildlife.ca.gov/OSPR).

A-4: Oil Spill Trajectory Analysis

Oil spill trajectory modeling was conducted to determine the movement and fate of spilled oil if a spill occurred in the Southern California Planning Area from existing offshore oil and gas operations. BOEM collaborated with the National Oceanic & Atmospheric Administration (NOAA) Office of Response & Restoration to create a Trajectory Analysis Planner (TAP) for the Southern California Planning Area. A regional TAP involves the development of a database created by analyzing statistics from a large number of simulated spill trajectories. These trajectories were run using the General NOAA Operational Modeling Environment (GNOME) (Zelenke et al. 2012; NOAA 2015) with forcing from a high-resolution (1 km) Regional Ocean Modeling System (ROMS; Shchepetkin and McWilliams 2005) hindcast. This extensive model output allows modeling of realistic oil spill scenarios over a range of different regional oceanographic regimes (such as upwelling, relaxation, and eddy-driven flow). Modeled spills were started at the locations of Federal offshore oil and gas operations in southern California. A maximum hypothetical spill of 1,000 bbl was simulated from each location using a spill rate of 200 bbl per day over 5 days.

The visualizations of the modeled spills can be accessed online through the web-based TAP viewer (https://tap.orr.noaa.gov/#locations/south-california/impact_analysis). Users can select features of the model's output for graphic display, including spill source (platform or pipeline) time since start, and level of concern. Figure A-1 shows one example of trajectory analysis results generated by the model. Figure A-2 shows the combined trajectory model results from multiple spill sources. It represents the full extent of areas that could be affected by the estimated maximum spill size (1,000 bbl).

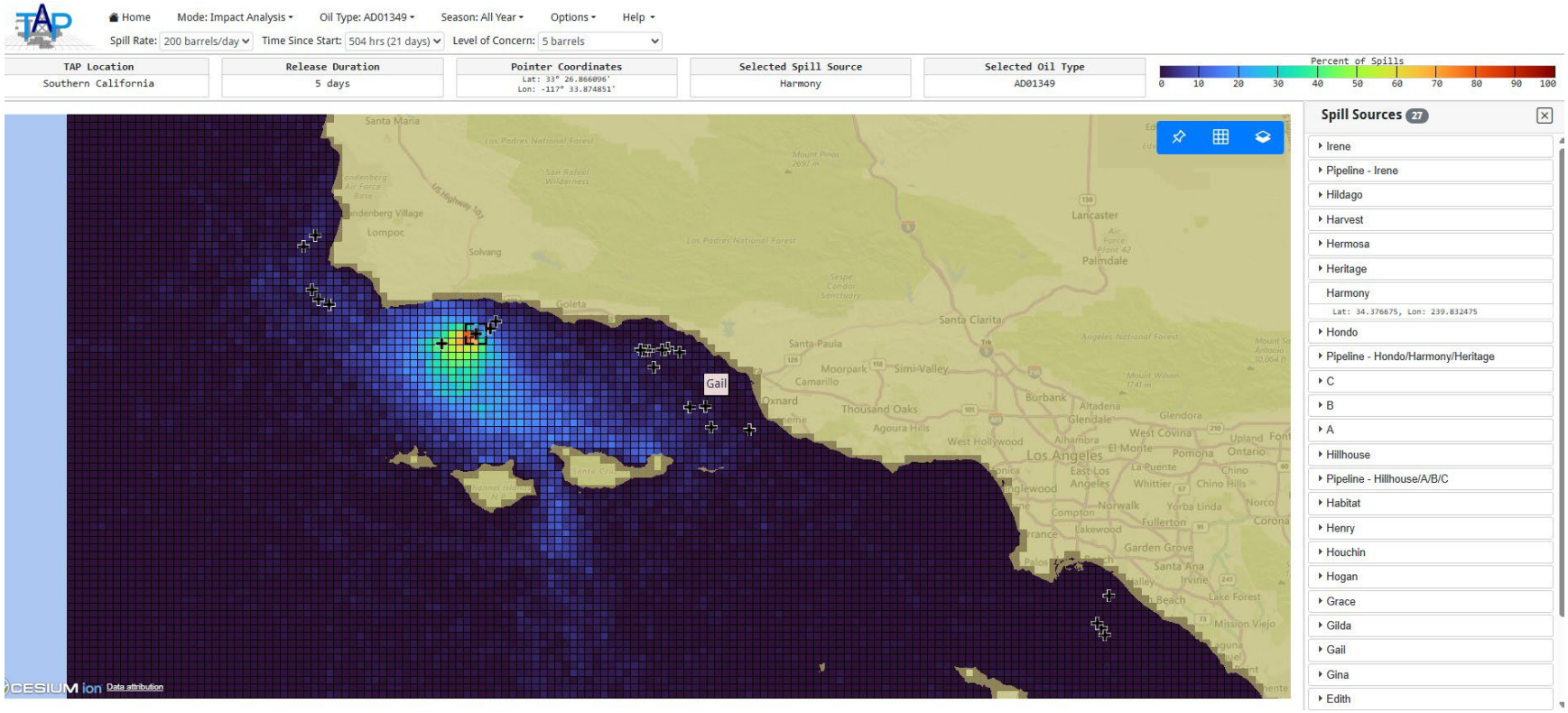

Figure A-2: Example graphic visualization of model results from Trajectory Analysis Planner (TAP) for the Southern California Planning Area. https://tap.orr.noaa.gov/#locations/south-california/impact_analysis.

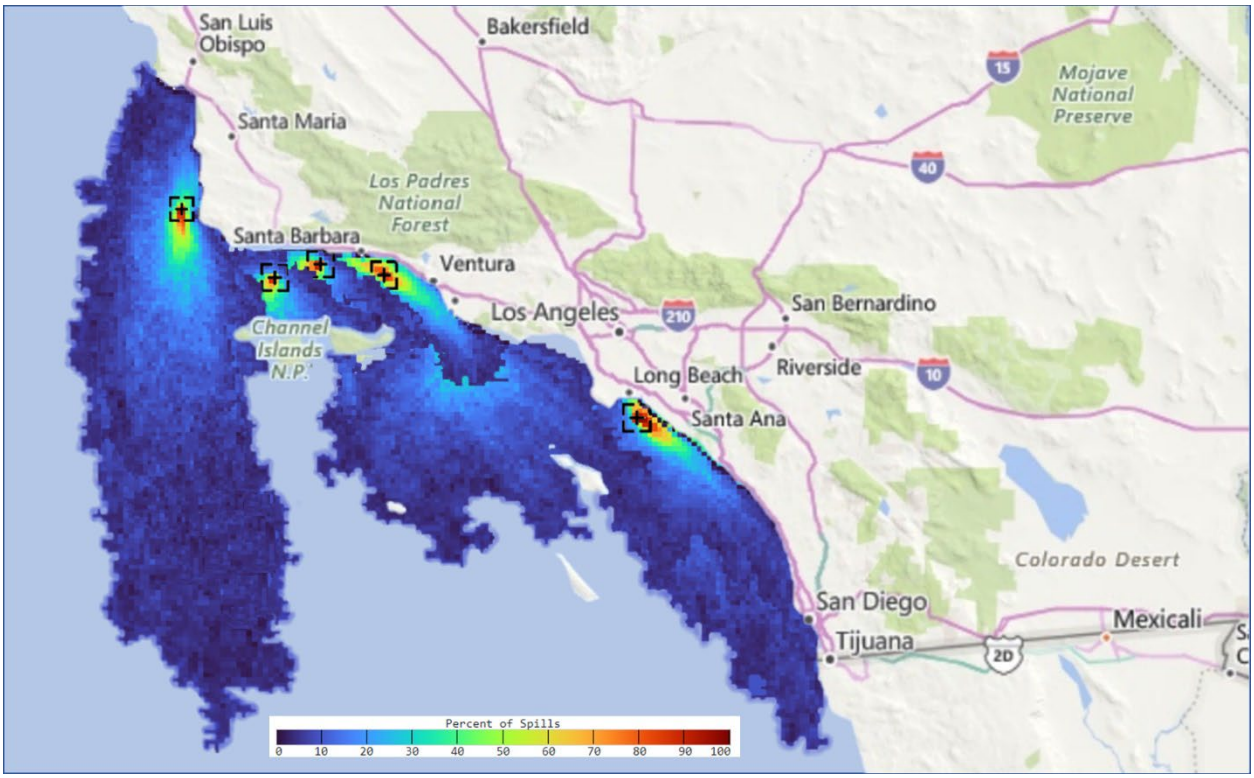

Figure A-3: Combined spill trajectory model results. Areas with colors represented on the color scale had greater than approximately 10 percent of modelled spills resulting in accumulation of 5 bbl or more by 21 days since the maximum spill occurrence (200 bbl per day for 5 days).

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